

The

IRON AGE

103rd Annual Issue

January 2, 1958

Up

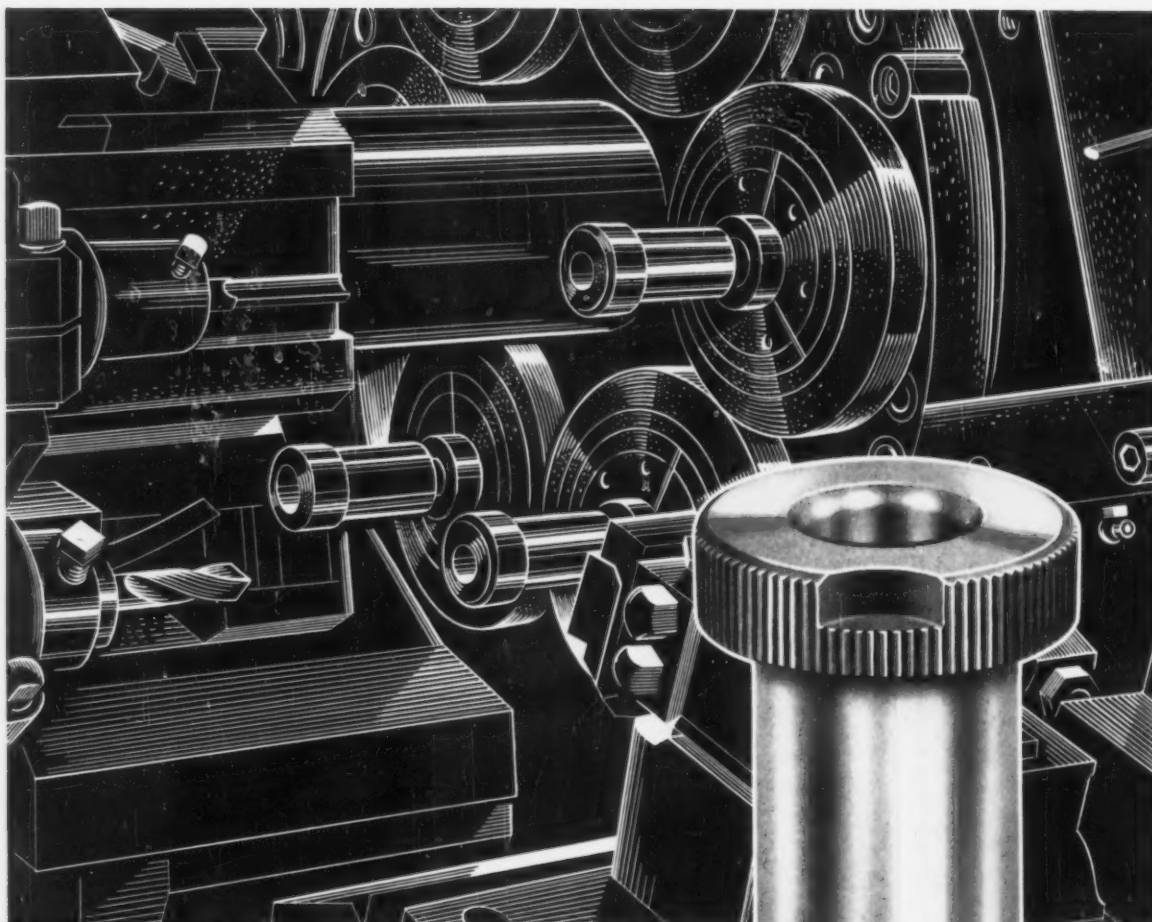
SPECIAL SURVEY REPORT

No Change

A Chilton Publication

**INDUSTRY
EXECUTIVES
FORECAST
1958**

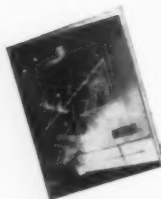
Digest Pages 2-3



Machine shown above—6 spindle New Britain Automatic Bar Machine.

ARISTOLOY LEADED BOOSTED PRODUCTION 44%

Lubricating effect permitted faster feeds and speeds



JUST OFF THE PRESS

New Leaded Steel Catalog.

Write for your copy today.

A simple switch from 52100 to 52100 leaded by Universal Engineering Company for this bushing permitted spindle speeds to be increased from 234 to 351 R.P.M. Machine speed was upped from 65 to 90 S.F.M. and feed from .004 to .006 I.P.R. As a result, production of bushings jumped from 89 to 130 pieces per hour. On another bushing, the same lead-treated material increased production from 87 to 124.

In hundreds of like cases, Aristoloy Leaded, the steel with "built-in" lubrication, has helped cut machining time, increased tool life and yielded better finished parts.

Today, Copperweld offers a complete line of leaded analyses and experienced field metallurgists who will be glad to work with you to determine the best Aristoloy Leaded for cutting your machining costs.

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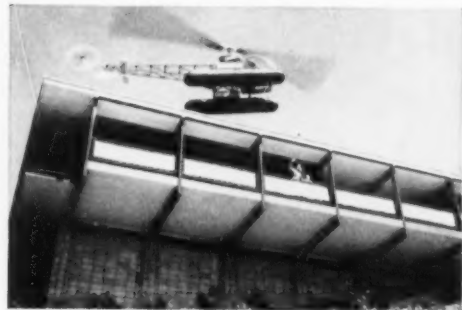


BETHLEHEM STEEL

News Briefs of 1957



SPANNING OLD MAN RIVER—The Mississippi River lies far below the steelwork for the Greater New Orleans Bridge. The main cantilever span is 1575 feet, longest of its type in the United States. Bethlehem is supplying and erecting some 34,000 tons of steel for this monumental bridge.



STEEL HOME OF THE FUTURE—When commuting by 'copter becomes commonplace, your roof can be your own heliport. Only a rugged steel frame could stand the strain. And exposed steel framing is used more and more for its beauty. Bethlehem Pacific Coast Steel Corporation supplied the structural steel for this modern home in the California hills.

NEW STEEL CAPACITY—

Throughout 1957, Bethlehem continued to expand and improve steelmaking facilities. When the program is completed at our Sparrows Point, Md., plant, for example, steelmaking capacity there will be 8,200,000 tons. This figure is larger than Bethlehem's total steel production in 1939 (7,958,000 tons).



TACONITE PELLETS—Some 7½ million tons a year of these small pellets of concentrated iron ore will soon be produced by Erie Mining Company's Minnesota taconite plant—largest iron ore processing undertaking in history. The project, in which Bethlehem has a substantial interest, began actual production of pellets in late 1957.



MORE SOFT DRINKS IN CANS!

In 1957 it took more than 40 billion cans of all types—some 5 million tons of steel—to supply can makers' demands. Nowadays, more and more soft drinks and other good things to drink and eat come in cans. Bethlehem is a major supplier of tinplate—thin sheets of steel coated with tin—used in making cans.



SCALE MODEL OF RESEARCH CENTER

Early in the year, plans were announced for construction of a basic steel research center on a 1000-acre site adjoining the Lehigh University campus, and overlooking our plant and general offices at Bethlehem, Pa. Here Bethlehem scientists will have superb facilities for carrying on vital research projects.

GIANT TANKERS—Contracts awarded to Bethlehem's Shipbuilding Division during the year included a number of tankers ranging from 25,000 to 106,500 tons. The latter, to be built at our Quincy, Mass., yard, are about twice as long and twice as wide as a standard wartime tanker and will carry six times as much cargo.

T-2 TANKER, 524 FT.



SUPERTANKER, 937 FT.



MAKING STEELMAKING SAFER—For the fifteenth consecutive year a Bethlehem plant has won first place in the annual safety contest sponsored by the Metals Section of the National Safety Council. Our Sparrows Point, Md., plant won first place among all large steel plants in the nation. The Bethlehem, Pa., plant won second place, and the Johnstown, Pa., plant third.



THE IRON AGE
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The IRON AGE

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This One Throw You 7

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MARKET

OUTLOOK—1958

THE ECONOMY

A Silver Lining—As 1957 stag-
gered into history, the economic
outlook was none too cheerful.



Negative thinking was growing.
Yet it didn't take an expert to see
that January's recession talk could
become June's boom talk. P. 149

EXECUTIVES FORECAST

For 1958—Here are the results
of a 17-industry survey covering a
cross-section of metalworking com-
panies. Top executives report on the
outlook for sales, profits, wages,
prices, inventories. P. 179

THE NEXT DECADE

A 40 Pct Gain?—If you accept
the past decade as the living pattern
of our economy, you should expect
a gross national product of \$600
billion a year by 1965. But to
achieve it, capital goods industries
must keep growing. P. 257

MARKET GUIDE

Stainless and Nonferrous—Some
of the industry consumption figures

Survey Report 1958

103rd Annual Issue

may surprise you. This complete rundown on markets for metals will prove a valuable aid. P. 267

COMMERCE GROUPS

Appraise the New Year—Signs that the longest boom in history is getting tired are supported by U. S. Chamber of Commerce reports. They suggest we are in for more than minor adjustments. P. 296

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Gray Iron Foundries—Hopes pin on marketing programs. P. 210

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Machine Tools — Builders will seek replacement market. P. 226

Malleable Iron Foundries — A tough year lies ahead. P. 230

Nonferrous Foundries — Fight

rising costs.

P. 234

Pumps and Compressors—A new sales approach. P. 238

Steel Forgings — Automotive buying will call the turn. P. 242

Steel Foundries — Little reason for cheer in year ahead. P. 246

Welding Equipment — Higher sales predicted for 1958. P. 250



ANNUAL REVIEW—FORECAST

AUTOMAKING

An Eventful Year — Looking back, a number of events stand out in 1957. Ford made big news with the Edsel. Chevrolet lost sales leadership to Ford, and independents scored. P. 162

NEXT WEEK

MISSILE PROGRAM

A New Era—This year will see the first real impact of the missile on the national economy. Metalworking will find out just where it fits into this new concept of national defense based on missiles, not conventional weapons.

WASHINGTON REPORTS

Pick-up Will Come — Government experts are looking to the second quarter for a boost in business. They call current conditions a "shake out" period, say the key factors will be defense, public works and consumer spending. P. 167

MACHINE TOOL UPTURN?

Builders Are Hopeful—There's tempered optimism among machine tool builders about '58 sales. Market will improve, they say, if buyers regain their confidence and start replacing tools to stay competitive. A step-up in defense production would also help. P. 171

TRADE ASSOCIATIONS

Latest List — Names, addresses, officers, and 1958 meeting dates of leading trade associations are included in this directory. P. 344

PRICE DATA

And Production Figures — Sixteen pages of data on materials ranging from iron ore to finished steel are available as a reference guide. P. 323

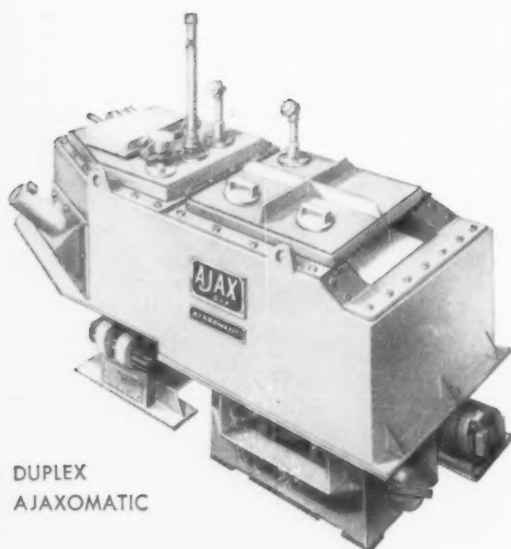


CAN WE STILL AFFORD HAND-LADLING?



AJAXOMATICS

bring automation to die casting



DUPLEX
AJAXOMATIC

The Duplex AJAXOMATIC melts aluminum pig and gates right at the die casting machine. By pushing a button the operator initiates the complete casting cycle: the die closes and the Duplex AJAXOMATIC pours the exact required amount of molten metal directly into the cold chamber. The operator just removes the finished casting at the end of the cycle.

Automation, however, is only part of the AJAXOMATIC story. The Duplex AJAXOMATIC also gives assurance of consistent quality. The quality of a finished casting begins with the proper melting of the metal. 60 cycle induction with its two basic features of internal heating and electromagnetic stirring is used exclusively in the Duplex AJAXOMATIC. Here are the unique characteristics of the Duplex AJAXOMATIC:

Precision temperature control — at low temperature	No supply ladle system or hand ladles
Alloy uniformity — no segregation	Precise weight of automatic pour
No gas porosity	Comfortable working conditions
Low metal loss	Low maintenance

The standard Duplex AJAXOMATIC is rated 120 kw to produce 500 lbs per hour of castings ranging from 1/2 lb to 30 lbs. Other AJAXOMATICS are available to suit a wide range of production requirements, including units supplied from central melting systems. May we have an opportunity to study your requirements?



60 CYCLE INDUCTION MELTING
ENGINEERING CORPORATION

TRENTON 7, NEW JERSEY

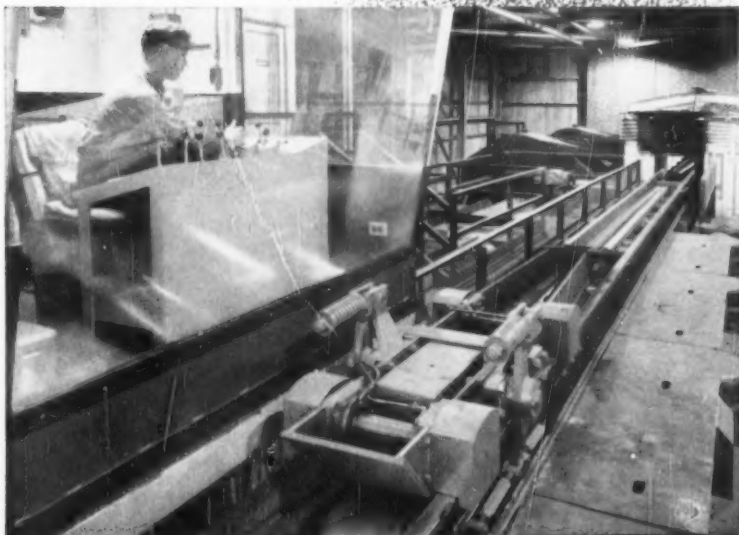
Associated Companies:

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MORGAN MILLS

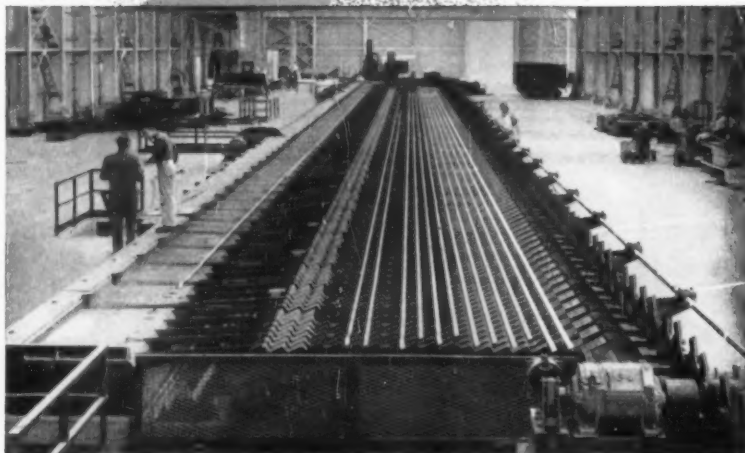
MORGAN QUALITY



MERCHANT AND ROD MILL
Atlantic Steel Company
Atlanta, Georgia

from
START
to
FINISH

Morgan engineered and equipped from charging car to cooling bed this new Atlantic Steel Mill is now in full operation. This mill is just one of two hundred and twenty-one Morgan continuous rolling mills which have been purchased by steel plants throughout the world.



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Rolling Mills • Mergoil Bearings • Wire Mills • Regenerative Furnace Control • Ejectors • Gas Producers

Armco 17 Stainless Steel Sheets

Now Cost 20% Less Than Type 302

In Many Applications, Type 430 delivers the most for the least

If you now use chromium-nickel stainless steels in products that don't come in contact with corrosive chemicals, sea water, or salt air, there's a chance that economical Armco 17 (Type 430) Stainless Steel can bring you substantial savings.

Today, for example, the price base of Armco 17 (17% chromium) Stainless Steel sheets is about 20 per cent less than that of Type 302. That's a saving of 11¼ cents a pound—\$225 a ton! The reason is that Armco 17 contains no costly nickel.

Ideal for many products

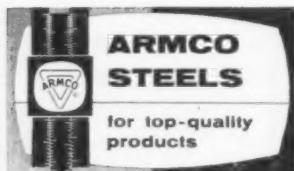
If you have hesitated to specify chromium-nickel stainless

steels for your products because of cost, it may pay you to investigate economical Armco 17.

Typical examples of products that can be improved with this low-cost stainless steel include architectural trim, appliance parts, tableware, counter tops, hospital equipment, sinks and drainboards. In addition, its resistance to heat scaling and strength at high temperatures have made it ideal for heat exchanger parts, combustion chambers, and similar items.

Mail the Coupon for Details

Armco 17 Stainless is readily available in both sheet and strip. Why not check to see if this economical stainless steel is suitable for *your* products? It is also supplied in bar, wire and billets—at lower cost too. Just fill in and mail the coupon for complete information. There's no obligation



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Cold-Rolled PAINTGRIP®
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Every New Year is Tough Don't Let This One Throw You

We have become crisis slaphappy. There is hardly such a thing as a calm life, a routine business, or a normal period. At least that is the way it seems.

We have lived on the edge of the precipice so long that we think in terms of superlative alarums. This often causes tricky kinks in our mental armor.

It has been long since a man in business has been able to commune with himself. Often an attempt to do it produces anxiety instead of solace. Yet it is possible to depart temporarily from reality—if we don't stay too long.

Perhaps some of us should take a moral inventory this year. The business recession will be a temporary one. It will be followed by an even greater expansion of the economy. But for some of us, this year may be the time to decide if we are headed for success or failure.

But what is the test? Who makes it? Who tells us if we pass or fail? We have been caught up in so much action, reaction, irritants, counter-irritants, and frustrations that it may take time to unravel the cords of pseudo-conformity.

We are the ones who determine if we succeed.

But to do this we must be coldly objective in our soul searching. Men are made to bloody their heads at the wall of success. Many scale it, taste it, and like it. Others seek it, worship it, almost reach it, and continually hate it.

But in 1958 perhaps we need a broader view of what we conceive success to be. There is no universal formula; fortunately there is enough flexibility to take care of each man's personality, capacity, and weakness.

Aside from the cash position, titles, public adulation, or the office pinnacle, there are other things to be considered.

There is still integrity of spirit; perhaps known only to oneself. There is honest astuteness that grants the other a fair chance. There is still humility which takes years to acquire, cultivate, and practice.

Hard but worthwhile too is self-discipline. This builder of success will some day be recognized as God's type of tranquilizer. Today's panic becomes tomorrow's laughing matter.

We are the ones who will help get us past this year. We must call the shots—and abide by the outcome.

Tom Campbell

Editor-in-Chief

COMMERCIAL Custom Forging
for every industry...



Clark Equipment Company 180 Turbo-Dozer

Forged ball-joint housing saves 90¢ plus 10% on machining

Clark Equipment Company switched to upset forgings for its ball-joint housings with impressive results. The part used for the steering and driving mechanism of its line of Four-Wheel Drive MICHIGAN End Loaders and Turbo-Dozers was formerly produced as a steel casting.

After the housings were turned out by Commercial as closed-die forgings on an 8-inch upsetter, Clark Equipment reported:

1. A 15 lb. saving of metal through a weight reduction from 95 to 80 lbs.
2. An initial cost saving of 90¢ per part.
3. Closer tolerances—some dimensions even to finished size—for a 10% machining cost saving.
4. No rejects due to hidden metal faults.

Now, this important component not only costs Clark less but also provides the strength, inherent in all forgings, to resist unusual operating strains and assure longer, trouble-free performance.

Many parts like this unusually shaped housing, which were formerly considered impossible to forge, are now routine at Commercial. An early check with Commercial's forging engineers on your particular component forming problem will prove it to you—may save you time, money, help improve performance.

WHEN AN UPSET FORGING?

Check your part forming problems against this list of "bench marks" for parts requiring:

- Reduced weight, thinner section, greater strength.
- Consistent soundness—no losses due to porosity.
- Good appearance—smooth, close-grained surface.
- Superlative shock and fatigue resistance.
- Uniform response to heat treatment.
- Cost-cutting advantages in finishing—less waste metal, reduced machining, no rejects due to hidden flaws.

Address The Commercial Shearing and Stamping Company, Dept. K-1, Youngstown 1, Ohio.

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LETTERS FROM READERS

Cost Cutters

Sir—Your Dec. 12 issue contains a very fine article entitled "How to Plan for Lower Costs." I would appreciate having a copy. Thank you.—G. M. Avalon, Vice Pres. in Charge of Mfg., Permo Inc., Chicago.

Sir—We have found your 9th Survey Report to Management, "How To Plan For Lower Costs," most informative.

As we would like each member of our cost reduction committee to study this report, please send us 12 copies.—C. R. Farmer, Adv. Mgr., The Chicago Screw Co., Bellwood, Ill.

Sir—Your article, "How To Plan For Lower Costs," appearing in the Dec. 12 issue of The IRON AGE, was extremely interesting and thought provoking.

In view of the potential message it carries, would it be possible to get twelve copies of this article?—A. J. Yannatta, Gen. Plant Mgr., Rockwell Spring & Axle Co., New Castle, Pa.

■ Copies will be sent.—Ed.

Machining Stainless

Sir—In your July 25 issue you published an article entitled "Tips on Machining Stainless Steel." We have found this article very interesting and would like to circulate a few copies throughout the plant. Please send about 12 copies to my attention.—A. Schrob, Metallurgical Research, Weston Electrical Instrument Corp., Newark.

Heat Treat \$

Sir—We are interested in obtaining ten copies of the article, "How To Get More For Your Metalworking Dollar—Heat Treating," which appeared in the Oct. 24 issue, to be distributed to our foremen.

We would appreciate it if you would send these reprints at your earliest convenience, as we feel this is an excellent article and are anxious to have our men read it.—E. Punko, Metallurgist, Wehr Steel Co., Milwaukee.

Wants More

Sir—You have been very kind in sending us fifteen copies that we requested of your article, "How To Plan New Products," that appeared in the Oct. 17 IRON AGE.

The above has been found so interesting and so worthwhile that the president of our company has requested that I try to obtain an additional twenty-five copies.—R. Rathen, Mgr., Crucible & Refractories Div., The Joseph Dixon Crucible Co., Jersey City.

■ Copies are on the way.—Ed.

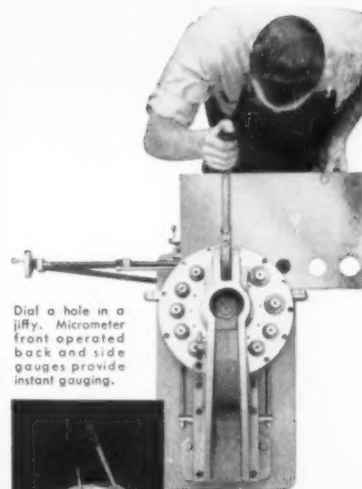
Communications

Sir—I was much impressed with your article, "How to Build Good Communications."

Since I am supposed to keep management informed on these matters, would you send me a reprint of the entire article?—H. Hartung, Editor, Rota-Ring Review, Muskegon Piston Ring Co.



"About this cutting corners to boost production, Hansen . . ."



Dial a hole in a jiffy. Micrometer front operated back and side gauges provide instant gauging.



new
Di-Acro®
turret
punch
press

Accurate Burr-Free Punching at 12 Rotating Stations

The new Di-Acro 4 Ton Turret Punch Press provides rapid, close tolerance punching of round, square, oval and rectangular holes from $\frac{1}{16}$ " to 2".

Rotating turrets provide rapid indexing for single or sequence punching. Precision hole location quickly obtained with Micro-twin gauges. Punches sheet metals up to 16 gauge mild steel, fibreboard, asbestos, paper, cork, leather, rubber, plastic and other sheet materials.

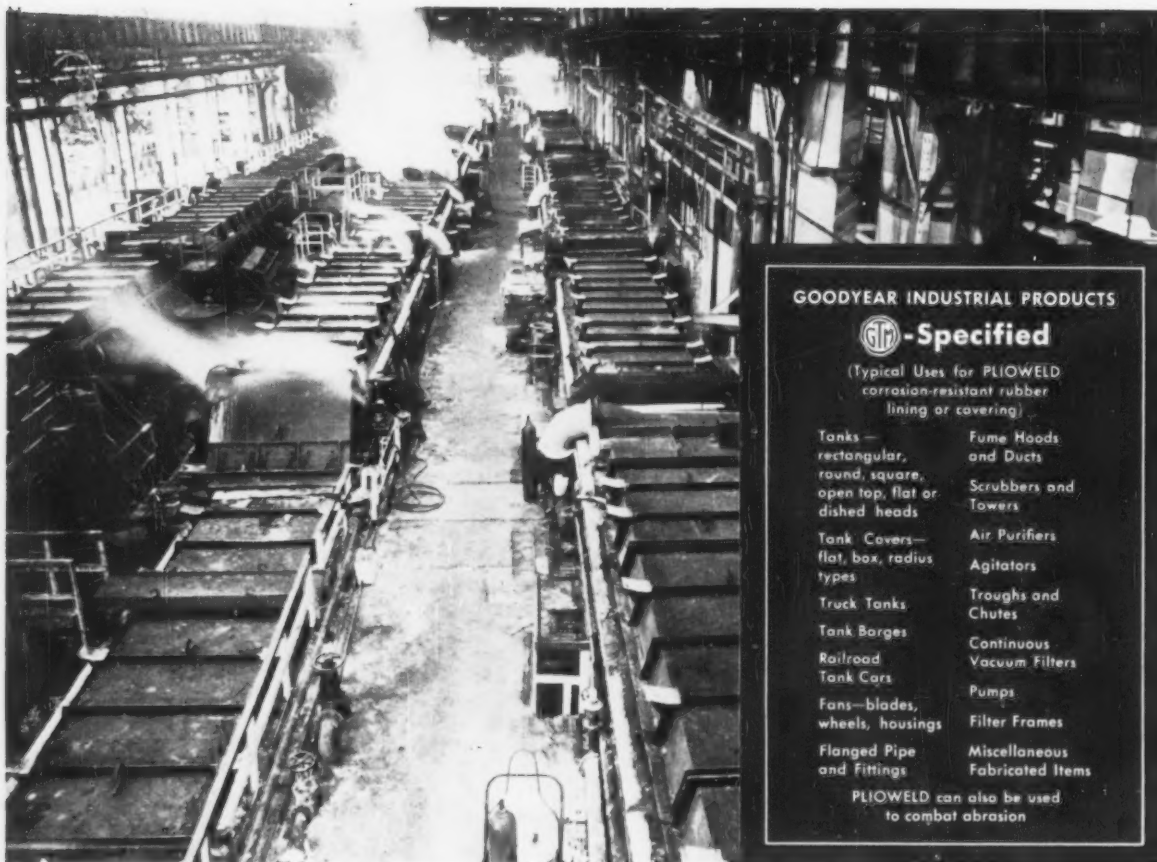
Dies are mounted in turrets—always handy. Standard clearance between punch and die is .002". Choice of 6 other clearances at no charge. The Di-Acro Turret Punch Press is safe, simple to operate—requires little maintenance.

Consult the Yellow Pages of your phone book for the name of your nearest Di-Acro distributor or write us for catalog describing this and other Di-Acro machines.



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GOODYEAR INDUSTRIAL PRODUCTS



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(Typical Uses for PLIOWELD
corrosion-resistant rubber
lining or covering)

Tanks — rectangular, round, square, open top, flat or dished heads	Fume Hoods and Ducts
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Truck Tanks	Air Purifiers
Tank Barges	Agitators
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Fans—blades, wheels, housings	Continuous Vacuum Filters
Flanged Pipe and Fittings	Pumps
	Filter Frames
	Miscellaneous Fabricated Items

PLIOWELD can also be used
to combat abrasion

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Keeping a giant-size pickling line in steady production is no little trick. Especially in a big-name steel mill like this one—turning out millions of tons a year.

Their 25% sulphuric pickling solution wages constant acid attack on whatever equipment used. And the above-average 225°F. operating temperatures are especially hard on rubber—preferred linings for most pickling tanks.

Right from the beginning, the G.T.M.—Goodyear Technical Man—saw these tough conditions as a good spot for PLIOWELD—the acid- and abrasion-

resistant rubber by Goodyear. How right was he? At last report, the PLIOWELD tank linings had given 17 straight years of more-than-satisfactory service—still looked good for many more.

That's no rare case, either. Wherever the G.T.M. tackles a problem—and solves it with a super-quality Goodyear product like PLIOWELD linings—you can count on exceptional service. Give him a try by contacting your Goodyear Distributor—or writing:

Goodyear, Industrial Products Division,
Akron 16, Ohio.

PLIOWELD TANK LININGS by

GOOD YEAR

THE GREATEST NAME IN RUBBER

Ploweld—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

IT'S SMART TO DO BUSINESS with your Goodyear Distributor. He can give you fast, dependable service on Hose, V-Belts, Flat Belts and many other industrial rubber and nonrubber supplies. Look for him in the Yellow Pages under "Rubber Goods" or "Rubber Products."

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Rep. C. H. Brown
U. S. Congress

Review

Few of us may realize it, but literally thousands of people contribute to the editorial pages of *The IRON AGE* each year.

So as we enter 1958, the editors salute all those who make the book possible, and wish them the best in *The New Year*. This goes for the hundreds of people they talk to each week in making their rounds of news and markets calls and the many engineers and production men who keep them posted on latest technical developments.

Cover Men—A special vote of thanks goes to the top-flight men, above, who have authored some of our cover articles in the past year.

We feel they all had something

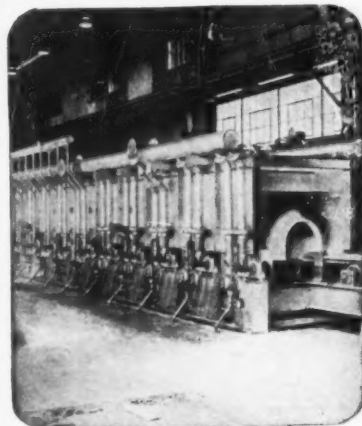
important to say to metalworking—from former Treasury Secretary George Humphrey's views on fast tax write-offs to Ben Fairless' reflections on what makes for real success in business.

From your enthusiastic response to these articles we're sure you agree. And you can look forward to more like them this year.

Forecast

We also think you'll like this week's Annual Issue. The editors have gone all out to bring you the best information they could gather on the 1958 business outlook. You won't want to miss the 17-industry survey report which begins on p. 179.

SPEED HEATING SAVE SPACE IMPROVE QUALITY WITH HI-HEAD



R-S HI-HEAD HEATS 25 TONS SLAB PER HOUR.. 75% LESS FLOOR SPACE.. ONE FOURTH LABOR

Now, heating of 25 tons of stainless steel slabs per hour is a continuous operation at Atlas Steels Ltd. The R-S Hi-Head Furnace reaches a high heat fast and maintains it uniformly in all parts of the furnace for the complete cycle. Heating time is reduced... there is no overheating of slab edges... and uniformity is assured on every piece. Labor is one-fourth that required on conventional furnaces. Floor space used is 75% less.

You can boost your "Quality Quota" if you heat with R-S Furnaces. For full technical details on faster slab heating write for the folder "Continuous Slab Heating."

R-S FURNACE CO., INC.

Philadelphia 44, Pa.



Car Hearth Furnaces
Continuous Furnaces
Rotary Hearth Furnaces



NOW Call L. B. FOSTER CO. for



SEAMLESS ALLOY PIPE

SEAMLESS CARBON PRESSURE PIPE

PVC PIPE* VALVES-FITTINGS

*Polyvinyl-Chloride

Foster offers pipe buyers more complete warehouse service—including three new specialties—Seamless Alloy Pipe, Seamless Carbon Pressure Pipe and PVC Pipe, Valves and Fittings. Initial stocks are in our warehouses—immediately available for “Faster-from-Foster” service.

Now, anywhere in the country, when you need pipe, try L. B. Foster Company. We specialize in unusually large quantities, unusually large sizes, the hard-to-get items. Our regular stocks include all types of pipe—seamless, welded, carbon and alloy, prime tested and structural in all sizes $\frac{1}{8}$ " thru 36", and aluminum pipe. Catalogs are available.

Call your nearest Foster office today.

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All Pipe Sizes $\frac{1}{8}$ "-36"



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EXHIBITS, MEETINGS

Plant Management and Engineering Show—Jan. 27-30, 1958, International Amphitheatre, Chicago.

Packaging Machinery and Materials Show—March 25-28, Convention Hall, Atlantic City, N. J. (Hanson & Shea, Inc., One Gateway Center, Pittsburgh 22.)

JANUARY

Southern Industrial Distributors' Assn.—Midyear meeting, Jan. 6-8, Roosevelt Hotel, New Orleans. Society headquarters, 1626 Fulton National Bank Bldg., Atlanta 3, Ga.

Society of Automotive Engineers Inc.—Annual meeting, Jan. 13-17, Hotels Sheraton-Cadillac and Statler, Detroit. Society headquarters, 485 Lexington Ave., New York 17.

Malleable Founders' Society—Semi-annual meeting, Jan. 17, Hotel Cleveland, Cleveland. Society headquarters, 1800 Union Commerce Bldg., Cleveland.

Institute of Scrap Iron & Steel Inc.—Annual meeting, Jan. 19-22, Eden Roc, Fountainbleau, and Deauville Hotels, Miami Beach, Fla. Society headquarters, 1729 "H" St., N. W., Washington 6, D. C.

Truck Trailer Manufacturers Assn.—Annual meeting, Jan. 20-22, Palm Beach Biltmore Hotel, Palm Beach, Fla. Society headquarters, 710 Albee Bldg., Washington 5, D. C.

American Road Builders' Assn.—Annual meeting, Jan. 20-23, Sheraton-Park Hotel, Washington. Society headquarters, 600 World Center Bldg., Washington 6, D. C.

American Institute of Electrical Engineers—Winter meeting, Jan. 20-24, Hotel Statler, New York. Society headquarters, 33 West 39th St., New York 18.

Steel Shipping Containers Institute Inc.—Winter meeting, Jan. 21-22, (Continued on P. 16)

NEW FROM KIDDE!



ALL-NEW DRY CHEMICAL EXTINGUISHER KILLS FIRE FASTER, EASIER!



Kidde's new pressurized dry chemical portables awarded top U.L. rating! This means you can attack flammable liquid or electrical fires with confidence. Automatic unlocking device and trigger control mean easier, faster operation. Just follow simple directions . . . REMOVE HORN, PULL TRIGGER—instantly dry chemical knocks out fires. Other new features include extra-large aluminum handle—use with gloves on. Center-balanced—easier to carry. The plastic-faced pressure gauge is recessed for protection, tells at a glance if unit is ready to use. Available in both 20 and 30 lb. capacities.

Kidde



Walter Kidde & Company, Inc., Belleville 9, N. J.
Walter Kidde & Company of Canada Ltd., Montreal—Toronto

FREE INFORMATION

WALTER KIDDE & COMPANY, INC.
149 MAIN STREET, BELLEVILLE 9, N. J.

Check appropriate box, tear out, mail this coupon for prices, literature!

- ☐ Please send me your new P-40 fire extinguishing and detecting equipment catalog.
- ☐ Please send me prices and specifications for your new dry chemical extinguisher.

NAME _____

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CITY _____

STATE _____



P-40
Catalog

Resistance Welding Jet Engine Parts



HELPS PUT PROFIT
INTO MANUFACTURING

Heintz Achieves Volume Production with New Sciaky Counter Control Welders

In fabricating and job shops, where a wide variety of assemblies must be welded to rigid specifications every day, Sciaky resistance welding helps keep production schedules on schedule.

The Jet Engine Division of the Heintz Division, Kelsey-Hayes Company, a large Philadelphia contract fabricator, manufactures original and replacement parts for the aircraft industry. This means their production must meet exacting jet engine specifications.

New Sciaky Counter Control

To help meet these requirements, Heintz now uses Sciaky Patented Three-Phase Resistance Welders with the new Predetermined Electronic Counter Control. This new unit provides precise control of all welder functions for absolute production consistency. All control settings are realized with extreme accuracy, and are readily reproduced at any time to duplicate previous production runs. The machine cannot deviate from its setting.



Fig. 1 Seam welding Nimonic to Nimonic on Pratt & Whitney Aircraft J-57 afterburner diffuser section.



Fig. 2 Seam welding stainless to stainless on Pratt & Whitney Aircraft J-57 jet engine transition duct assembly. Note simple fixture used.

The Sciaky Predetermined Electronic Counter Weld Control is the only control of this type that has been proved in service, and the first unit of this kind has now been in use nearly two years.

How It Works

The Sciaky Predetermined Electronic Counter Control counts the cycles of power line frequency which is governed by the U.S. Naval Observatory. In predetermined absolute numbers, cycles and impulses are simply counted by a Dekatron tube to control the duration of the various welder functions. The absolute consistency of the control eliminates the need for time-consuming periodical check-out or calibration. Plug-in feature permits easy unit replacement, or addition of other control functions if required.

Operations Performed

Photos show typical Sciaky resistance welding applications on jet engine parts—Afterburners, Screech Screens, Engine Duct Assemblies, etc. Materials welded include Nickel Alloy, Nimonic and Stainless Steel.

Information Available

Case histories outlining the successful use of Sciaky Resistance Welding Techniques on jet engine components are available on request. Specific recommendations will be furnished on receipt of an outline of your requirements.

Write today, mentioning the information you would like to receive. There is no obligation. Sciaky Bros., Inc., 4923 W. 67th St., Chicago 38, Ill. Portsmouth 7-5600.

62-C



THE BIG WHEEL IN STEEL TRANSPORTATION

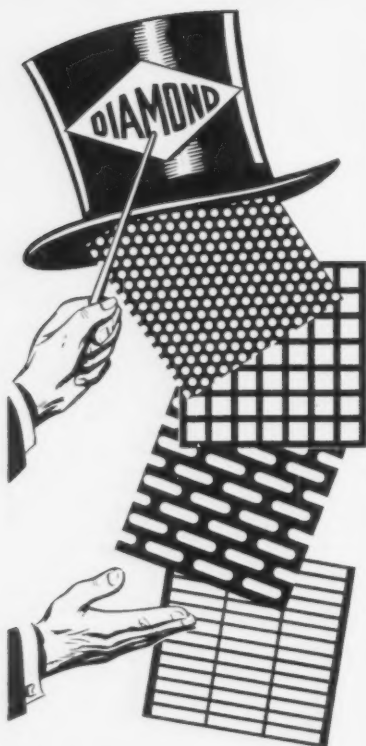
Transamerican serves more steel areas than any other carrier. When you buy steel route it Transamerican and get faster, more flexible, on-schedule delivery.



- 2,600 DIRECT POINTS SERVED DAILY
- SYSTEM-WIDE TELETYPE SERVICE
- TWENTY-SEVEN YEARS EXPERIENCE



General Offices: Detroit 9, Michigan • VI 1-9400 • ROBERT B. GOTFREDSON, President



Top-Hat Quality IN Perforated Metal

The popular Diamond Perforated-metal patterns shown above are only a few of the many illustrated and described in our 32-page Catalog No. 39. All of these standard patterns are available in a wide range of unit-opening sizes and we are always equally pleased to quote on original designs of any type or size.

Catalog 39 also illustrates and describes our high-quality lines of *Ornamental Cane*, Perforated-Metal Sheets for Acoustical installations and Heavy-Duty Architectural Grilles. Write, today, for a free copy.

Correspondence is especially invited regarding ANY requirement for perforated-metal panels or parts. We are equipped to fabricate special sections to any desired extent and welcome opportunities to make money-saving suggestions.

DIAMOND MFG. CO.
WYOMING WILKES-BARRE PA.

West Coast Plant,
DIAMOND PERFORATED METALS CO.
17915 So. Figueroa St., Gardena, California
Los Angeles Area

EXHIBITS, MEETINGS (Continued from P. 13)

St. Regis Hotel, New York. Society headquarters, 600 Fifth Ave., New York 20.

Association of Steel Distributors, Inc.—Convention, Jan. 26—Feb. 2, Algiers Hotel, Miami Beach, Fla. Society headquarters, 29 Broadway, New York 6.

Industrial Heating Equipment Assn.—Annual meeting, Jan. 27-28, Penn-Sheraton Hotel, Pittsburgh. Society headquarters, 1145 19th St., N. W., Washington 6, D. C.

February

Malleable Founders Society—Technical and operating conference, Feb. 6-7, Wade Park Manor, Cleveland. Society headquarters, 1800 Union Commerce Bldg., Cleveland.

American Society for Quality Control—Annual conference on management by exception, Feb. 7-8, Carter Hotel, Cleveland. Information: B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland.

Institute of Surplus Dealers—Annual trade show and convention, Feb. 14-17, New York Trade Show Bldg., New York. Society headquarters, 673 Broadway, New York 12.

American Institute of Mining, Metallurgical & Petroleum Engineers—Annual meeting, Feb. 16-20, Hotels Statler and Sheraton-McAlpin, New York. Society headquarters, 29 W. 39th St., New York.

MARCH

American Machine Tool Distributors' Assn.—Spring meeting, March 10-11, The Roosevelt, New Orleans, La. Society headquarters, 1900 Arch St., Philadelphia 3.

Steel Founders' Society of America—Annual meeting, March 17-18, Drake Hotel, Chicago. Society headquarters, 606 Terminal Tower, Cleveland 13.



**FAST SERVICE ON
FINE
FASTENERS
FOR INDUSTRY**



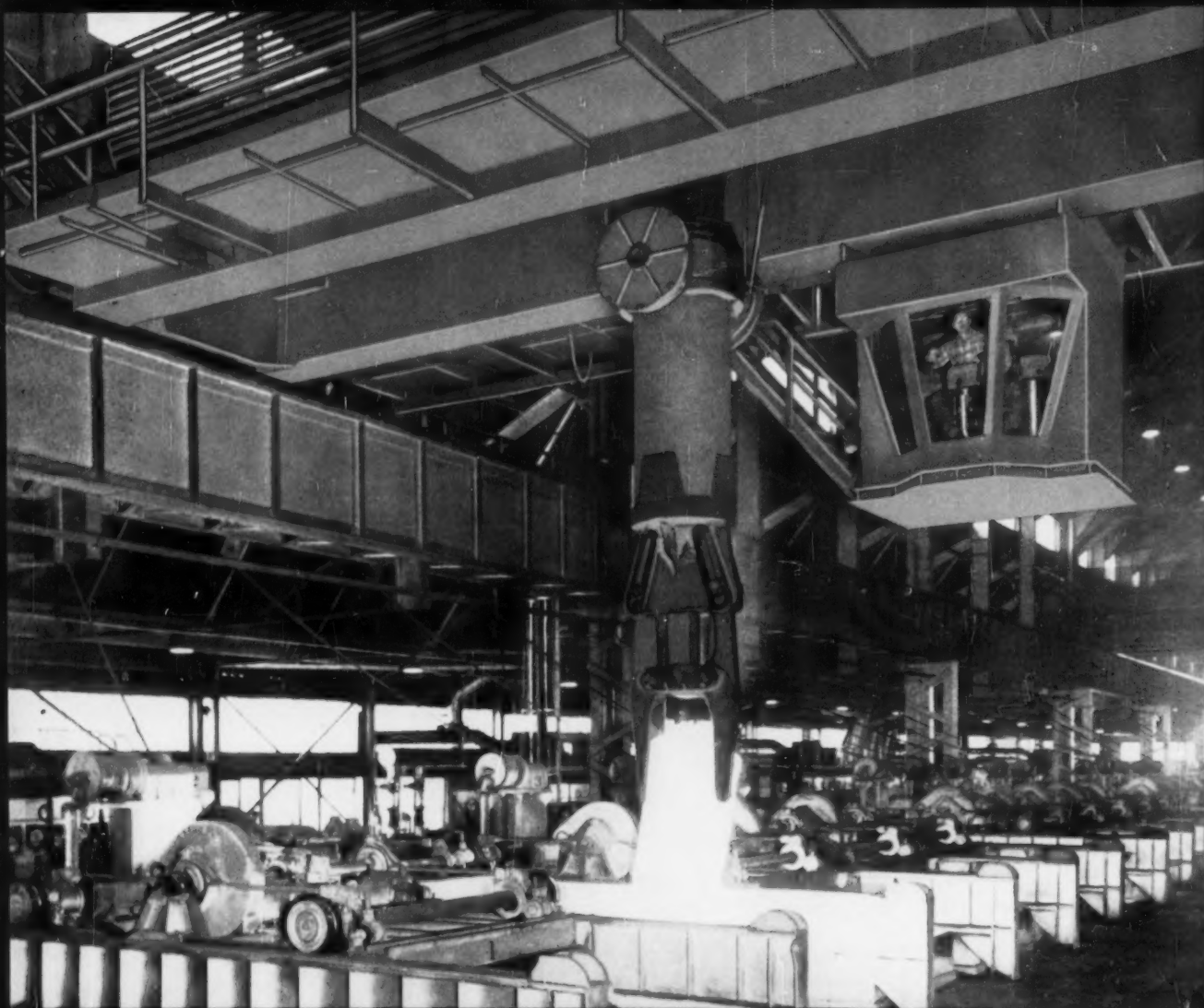
SOUTHERN SCREW COMPANY'S service is as famous as Southern's 10-year record for manufacturing only top quality fasteners. Over 1,000,000,000 in stock—with service in minutes if requested. If you use screws on your production line, write on company letterhead for this week's Stock List. Box 1360-1A, Statesville, North Carolina.

Wood Screws • Stove Bolts • Machine Screws & Nuts • A, B, C & F Tapping Screws • Wood & Type U Drive Screws • Dowel Screws • Carriage Bolts • Hanger Bolts

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something new in SOAKING PIT CRANES



This 20-ton telescopic ram soaking pit crane is designed to afford the operator maximum visibility. The operator is located in an air-conditioned cab attached to the bottom of the crane girder at approximately the center of the span. We also design this type of crane with the operator located on the deck of the trolley where he is best protected from the heat.

The tongs are designed to revolve 360 degrees and with a range to suit your ingot sizes.

The torque required to revolve the tongs is transmitted through the hollow square telescopic tubes. These flexibly connected tubes are designed with sufficient strength to safely tip the trolley.

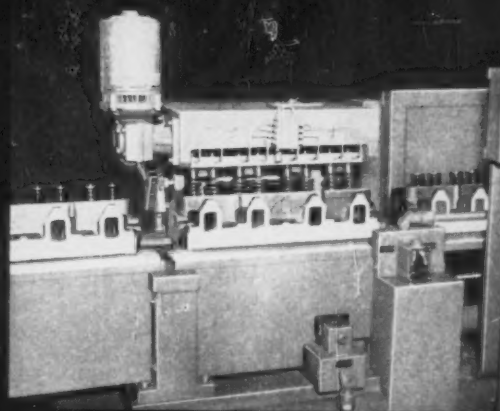
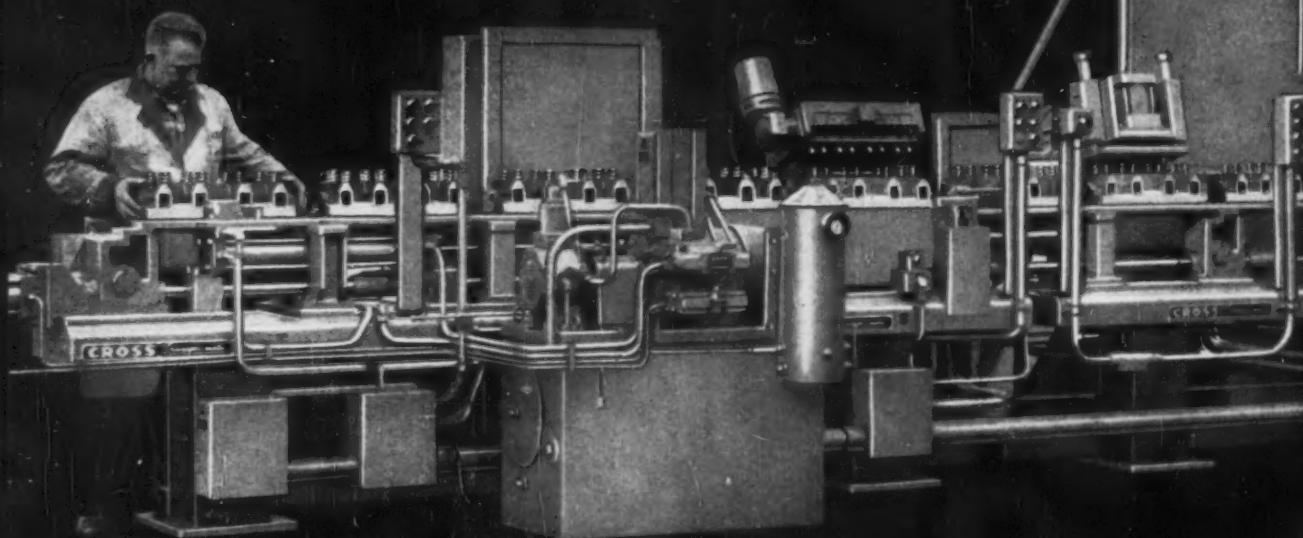
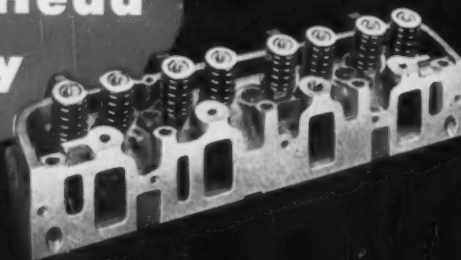
Alliance engineers specialize in designing BIG material-handling equipment. Consult them. They'll help you work out practical, efficient solutions to your handling problems.

"Give us the Runway and we'll lift the World"

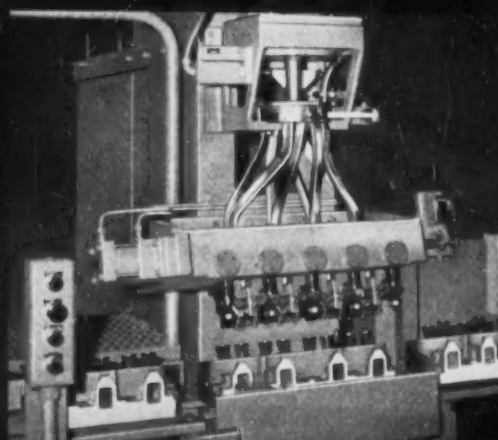
THE Alliance MACHINE COMPANY
FOUNDED 1901 MAIN OFFICE ALLIANCE, OHIO

LADLE CRANES • GANTRY CRANES • FORGING MANIPULATORS • SOAKING PIT CRANES • STRIPPER CRANES • SLAB AND BILLET CHARGING MACHINES • OPEN HEARTH CHARGING MACHINES • SPECIAL MILL MACHINERY • STRUCTURAL FABRICATION • COKE PUSHERS

Automation for Cylinder Head Assembly

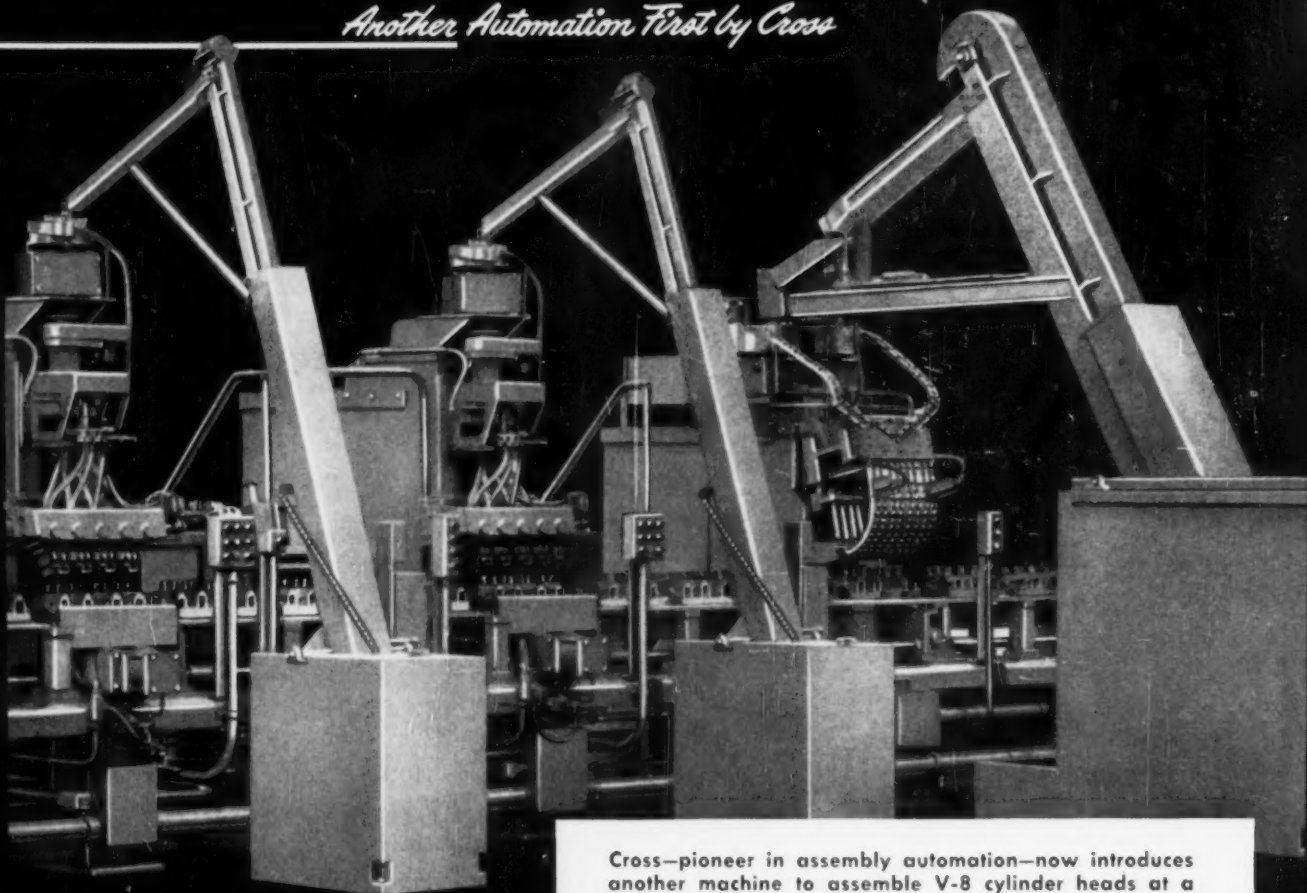


Station 25: Valve "popping".



Station 17: Automatic assembling
of valve locks.

Another Automation First by Cross



Cross—pioneer in assembly automation—now introduces another machine to assemble V-8 cylinder heads at a rated capacity of 310 per hour.

Cylinder head castings with intake and exhaust valves in place are loaded automatically at Station 1. At Stations 3, 4, and 5, rubber grommets are placed over the valve stems. At Station 7, an inspection is made for faulty valves and grommet positioning. If necessary, heads are removed, repaired and returned at Stations 8, 9, and 10. Valve springs, spring retainers and spring retainer sleeves are automatically assembled at Stations 11, 13, and 15 respectively. Valve locks are automatically assembled at Stations 17 through 23 with standby units for manual assembly at Stations 19 and 23. At Station 25, all valves are "popped" before unloading the finished assemblies at Stations 27, 28 and 29.

A unique feature of the machine is the transfer mechanism which lifts and carries the parts between stations to eliminate pallet fixtures used by older assembly machines.

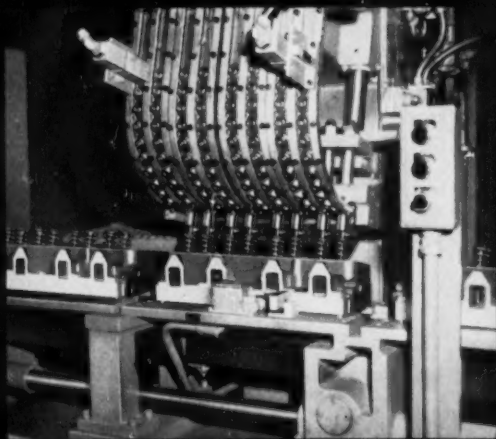
Building block construction provides flexibility for engine design changes and for additional automatic assembly devices of the future.

Like other Cross machines, all parts—even tooling details—are made to interchangeable tolerances for fast, easy maintenance. Other features include construction to JIC standards and automatic lubrication.

Established 1898

THE **CROSS** CO.
First in Automation

PARK GROVE STATION • DETROIT 5, MICHIGAN



Station 13: Automatic assembling of valve spring retainers.

Another MINSTER First in Press Design Operating in Production Lines Since 1953 Has Proved That You Can Get

More Single Stroke Operations

The exclusive "hidden value" in the Minster MS2 press is Minster's patented Intermediate Shaft Combination Air Friction Clutch and Brake Drive arrangement.

This drive arrangement makes it possible to get a higher single stroke efficiency, based upon rated continuous press speed, and the widest speed selection ever available on large double geared straight side presses.

Here's what this exclusive Minster feature can mean to you

- More production on manually fed or automated presses.
- Faster starting and stopping . . . more single stroke operations per minute.
- Less flywheel energy loss . . . lower power consumption.
- Reduced clutch wear . . . less maintenance and adjustment.
- You may select either the faster speeds of a conventional single geared machine or the slower speeds of a double geared press. Two-speed drive (optional) allows selection of a speed to fit different type operations.

How it works:

MS2 presses are double geared and have twin drive gears on the crankshaft. Minster's patented Combination Air Friction Clutch and Brake unit is mounted on a slower turning *intermediate shaft* instead of within the flywheel on the high speed drive shaft.

This means lower contact speed of clutch friction surfaces, resulting in very little heat on linings and less wear.

Flywheel can be run at maximum RPM for maximum energy without limiting speed of operations.

Additional Minster MS2 Press Features

Minster Recirculating Oil Lubrication system provides continuous oil film on all bearing surfaces . . . allows closer bearing and gib clearances for reduced lash and better slide guiding.

All air, lubrication and electrical systems are complete, enclosed within the press frame line, yet easily accessible. Electrical circuits and pneumatic systems for manual or automated production. Controls mounted within cabinet type uprights.

Massive, box type, four-piece tie rod frame for rigidity.

Precise slide to bed parallelism. Slide fully guided within gibs before midstroke is reached.

Outboard drive sheave for easy belt changing.

All wear surfaces bronze-lined, precision fitted and replaceable.

Per Minute



MINSTER®
MS2 Presses

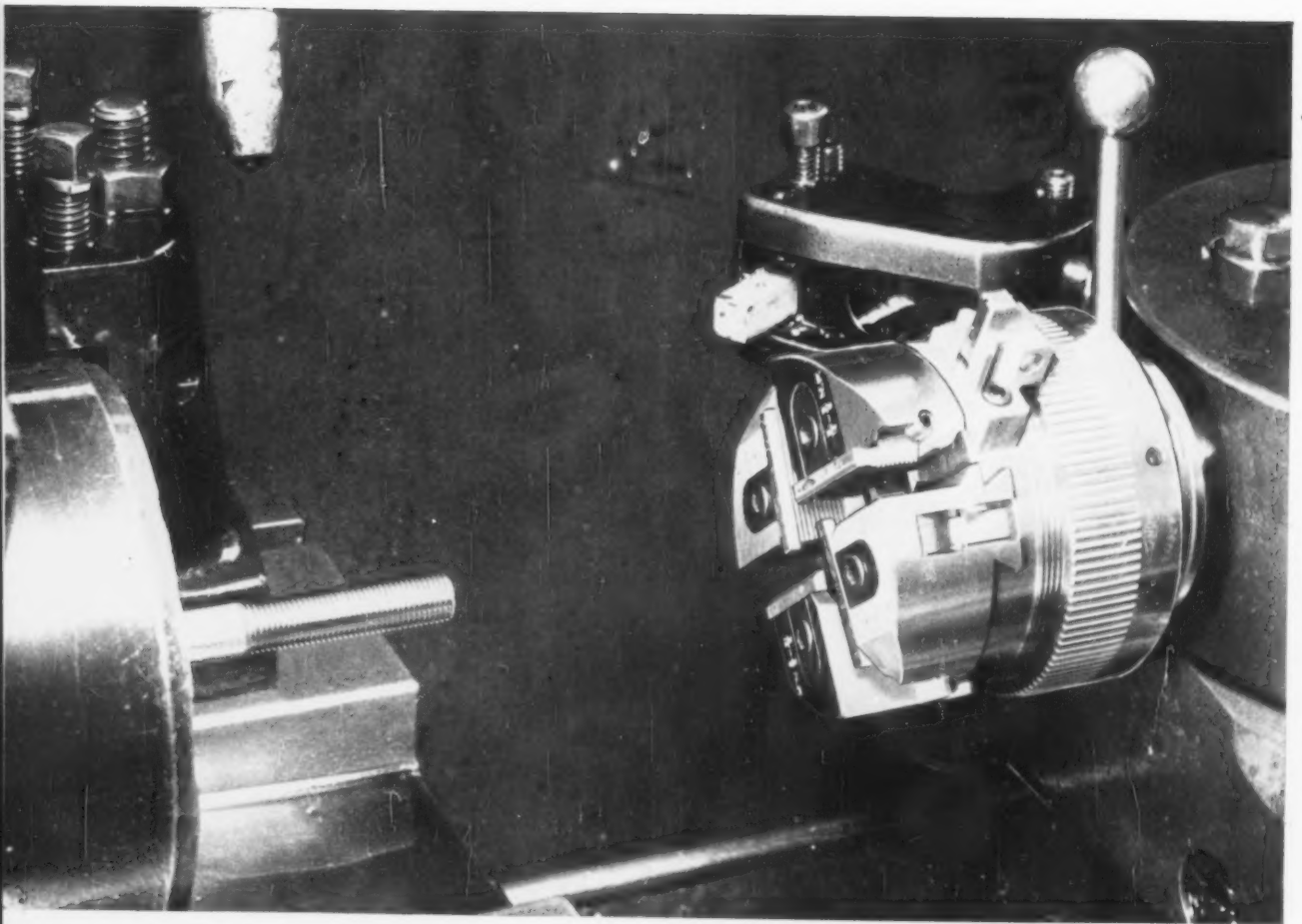
**150 TO 500 TON
CAPACITIES**

in five widths R to L in each
capacity—two F to B dimen-
sions in each capacity.

Dimensions meet
J.I.C. Standards

THE MINSTER MACHINE COMPANY
MINSTER, OHIO

CONCENTRICITY



HELD TO .002"

between workpiece O.D. and thread with **LANDIS Die Head**

Centering Throat Chasers enabled the LANDMATIC Head to solve a difficult threading problem at the Minneapolis-Honeywell Regulator Co., Valve Division, in Philadelphia, Pa.

Threads on valve stems for diaphragm control valves were required to meet a concentricity tolerance of .002" total indicator reading. The 5HH LANDMATIC Hardened and Ground Head using Centering Throat Chasers is the only head tested capable of producing these results.

The Centering Throat Chasers used in this operation are specifically designed for producing threads requiring a high degree of concentricity with the outside diameter of the workpiece. Thus they are particularly adapted for cutting long thread lengths where there is a tendency of the workpiece to run out-of-round.

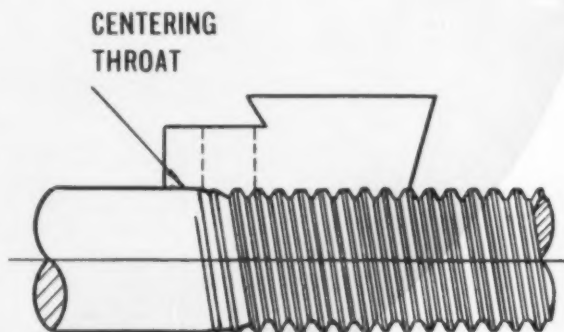
As indicated on the drawing, the centering throat section is allowed to protrude from the chaser cutting edge. This projection varies from $\frac{1}{8}$ " for the coarse pitch threads to $\frac{1}{16}$ " for the finer pitches. No cutting action takes place on this section of the chaser as it extends over the rotational centerline of the workpiece and only acts as a work aligning and supporting surface.

To produce these stems, $\frac{3}{8}$ " 24-pitch UNF threads are cut $1\frac{3}{16}$ " long on 316 stainless steel.

Cutting at 30 SFM the 5HH LANDMATIC Head mounted on #2 B & S Hand-Operated Screw Machine, produces these threads to *Class 3 tolerances*. Entire lots of 400 pieces are run without regrinding the chasers.

The LANDMATIC Hardened and Ground Head is a stationary head, designed and built to give the great rigidity required for precision threading. It is available in a variety of sizes for producing threads from $\frac{3}{16}$ " to 2" in diameter, and uses the LANDIS Tangential Chaser which may be reground and used for 80% of its original length.

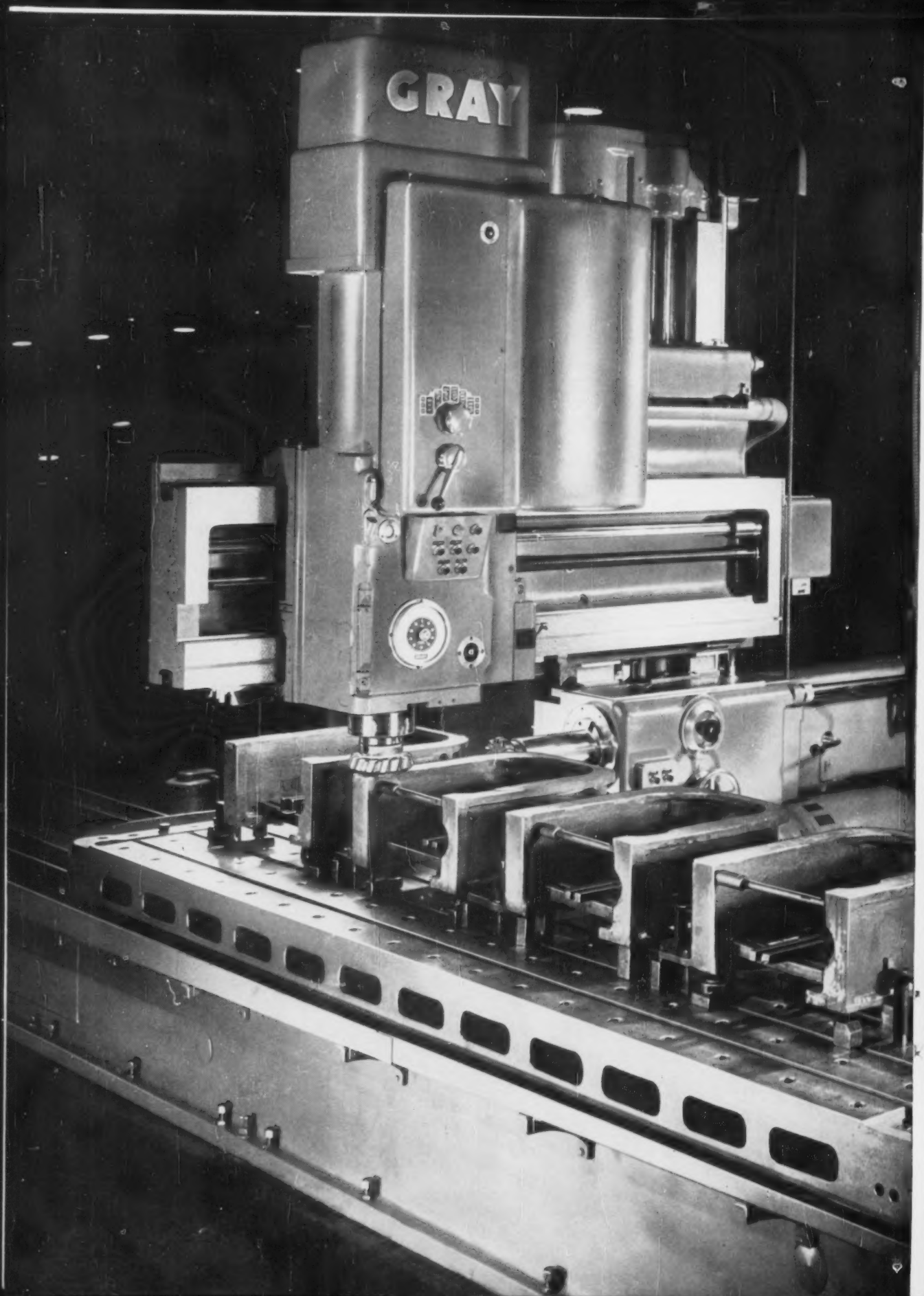
For detailed information, write for Bulletin F-80 — please include specifications.



LANDIS Machine COMPANY

WAYNESBORO
PENNSYLVANIA

473C



If you're tired of seeing small jobs on your large expensive millers . . .

If you're tired of extra set-ups because your miller has only a single head . . .

If you're tired of whittling away at rugged jobs with low power heads . . .

If you're tired of complicated controls that make your operator a mountain goat . . .

this new
GRAY HANDYMILL
is for you

Built in a wide range of high horsepower sizes, with great variety in head combinations, simplified pendant control, it fills a long standing need for a powerful, rigid, milling machine for medium sized jobs.

The G. A. GRAY Co., Cincinnati, Ohio



National Manufacturing Company to produce hinges in



Uniform Quality. In this Packing and Inspection Room, National hinges are given a final check, packed, and sent to retailers. They use USS Amerstrip because it comes with a consistently good finish for plating purposes.

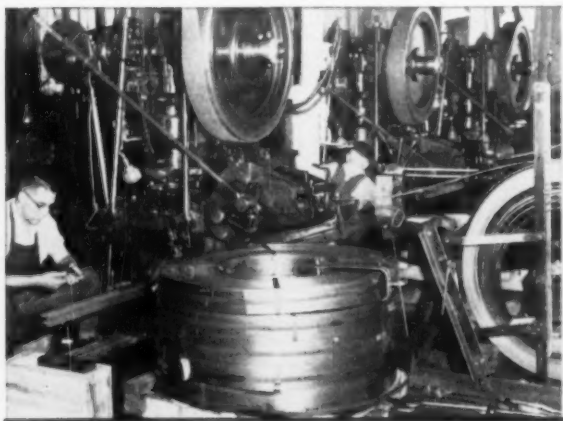
chooses American Quality Products

twenty-one high-quality finishes

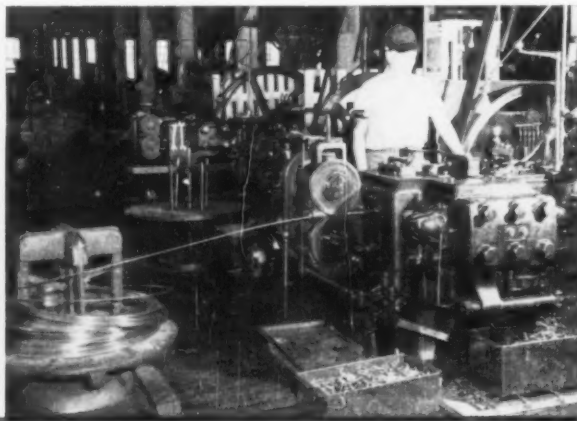
FOR 56 years the National Manufacturing Company of Sterling, Illinois, has been producing quality hardware. They began with a patented tail gate hardware set for wagons and have since expanded into a complete line of builders' hardware.

National produces a well-known line of hinges in 21 attractive finishes. They need a strip steel which will allow high-quality finish, and they use USS Amerstrip.

If you need strip steel with special qualities, choose USS Amerstrip. It comes in a complete range of analyses and tempers in carbon, stainless, and alloy steels . . . in coils or cut lengths . . . with a round or square, natural or rolled edge . . . and in all commercial finishes. American Steel & Wire has a large, experienced technical staff. These steel specialists can help tailor Amerstrip to your individual needs.



Holds Finish. This Midwest Punch Press is using 3 1/2" .109 Amerstrip to punch 100 hinge leaves per minute. Strip for hinges must hold its finish, yet be able to take slight abrasion. It must be neither too soft nor too hard. USS Amerstrip more than fills the bill.



Amerhead Hinge Pins. This Header is using .272 Amerhead Cold Heading Wire and is producing 140 pins per minute. They use Amerhead Cold Heading Wire because its strength and ductility guarantee long service for their high-quality hinges.

Amerstrip



American Steel & Wire Division

United States Steel Corporation
Columbia-Geneva Steel Division, San Francisco
Tennessee Coal & Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, New York

UNITED STATES STEEL

A two-word history of the overhead-crane industry!

Progress & Harnischfeger



...and now a NEW concept— **P&H** electronic “stepless” control

In overhead cranes, P&H has steadily pioneered new crane design. Now, P&H again moves years ahead of the industry with the modern concept — electronic, “stepless” control . . . excellent control response coupled with extreme simplicity. There are 60% fewer wearing parts in this new overhead crane control.

From P&H you get the most modern crane built—and one that stays modern, as this new control can be applied to existing AC-crane installations.

Write for data on this money-saving development, “Electronic Crane Control.” Address Dept. 100T, Harnischfeger Corp., Milwaukee 46, Wisconsin.

HARNISCHFEGER

P&H ...quality and service for 74 years



A few typical Gar high-precision products. At left in the center is a stainless steel mandrel on which copper is deposited to form the microwave step transformer (center). Cutaway section of transformer is held at right. Parts with more complex shapes are formed on expendable mandrels. Machined components, such as flanges and iris plates, can be fitted to mandrels and "grown" in place, eliminating need for brazing or soldering which would distort tolerances.

Periodic-reverse plating with "Plus-4" Anodes helps GAR mass-produce extreme-precision parts

The parts above are electroformed components for radar and microwave communication systems. Their complex inside surfaces must be exceptionally accurate in form and dimension. GAR Precision Parts, Inc., Stamford, Conn., has developed the art of electroforming such close-tolerance products into a practical mass-production process by the use of periodic-reverse acid-copper electroplating with "Plus-4"® Anodes — Anaconda's phosphorized copper anodes.

Periodic-reverse plating (5 seconds of plating and 1 second of deplating is a common cycle) has a leveling effect on the deposit, helps produce more uniform wall thickness — particularly important in irregular shapes and thickness up to .125".

"Plus-4" Anodes make the following contributions to the process:

1. Better anode corrosion—15% to 20% more usable copper.
2. Denser, smoother deposits with finer grain. Gar states this gives finished plate 10% greater tensile strength, makes finish-machining easier.

3. Rate of deposition is 8% to 10% faster for a constant amount of current.
4. More uniform build-up, without treeing. Heavier deposits can be made without intermediate grinding. Gar estimates 12% to 15% savings in copper.
5. Less sludge—no "bagging"—means easier tank maintenance, less down-time for cleaning.

See for yourself how "Plus-4" Anodes can simplify acid-copper electroplating and electroforming, reduce your costs. Write for information on how you can get a test quantity to supply one tank. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

67144B

ANACONDA®
"PLUS-4"

Phosphorized Copper Anodes

made by THE AMERICAN BRASS COMPANY
FOR USE UNDER PATENT NO. 2,689,216

ALLIS-CHALMERS...



Products for steel: motors, m-g sets, rectifiers, control, pumps, *Texrope* drive equipment, crushers, grinding mills, screens, transformers, unit substations, switchgear, circuit breakers, turbine-generators, voltage regulators, blowers, compressors, condensers, and water conditioning equipment.

Texrope is an Allis-Chalmers trademark.

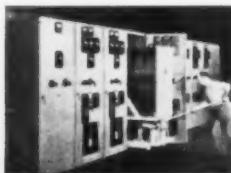
ALLIS-

. in Step with **STEEL**

The Hot-Strip Mill

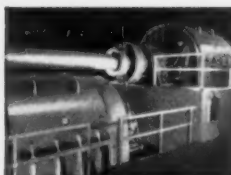
Reliable drive power to roll steel with speed and precision is provided by Allis-Chalmers hot-strip mill equipment. Powerful, specially designed driving components keep slabs moving round the clock to help steel producers keep pace with mounting demands. Step by step, Allis-Chalmers helps **STEEL** reach new production levels — set new standards in quality.

From mine to final processing, Allis-Chalmers equipment is in step with the tempo of expanding steel production. Contact the nearest A-C office in your district, or write Allis-Chalmers, Milwaukee 1, Wisconsin.



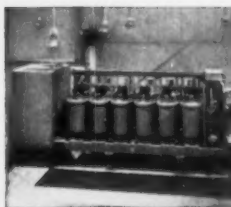
Switchgear

is specially designed by Allis-Chalmers to bring high voltage to load centers, with resultant economy in cable costs, minimum line loss, efficient regulation, and complete protection.



Dc motors

— Precision speeds for hot-strip mill performance are provided by a wide range of dc motors powered by supporting motor-generation sets or rectifiers.



Mercury arc rectifiers

furnish variable voltage dc power in support of dc drive motors. They are low cost, high efficiency units providing fast response to control signals, resulting in better voltage control and reduced maintenance.

For hot-strip mill operation, Allis-Chalmers also supplies mag-amp regulators, and auxiliary motors and control.

CHALMERS



A-5413

HOW WOULD YOU CAN a Neutron?

ZIRCONIUM . . . because of its low absorption rate for free neutrons . . . has been selected for use in atomic reactor plants now under construction. This rare wonder metal is derived from the black specks present in ordinary beach sand; in tubular form it serves as a container or can for the uranium pellets used in the fuel packages.

As a pioneer, Damascus has successfully welded zirconium tubing in several sizes and is now prepared to quote on production runs of Zirconium, Zircaloy 2 and Zircaloy 3 for reactor applications.

Write for complete information




 **DAMASCUS TUBE COMPANY**
STAINLESS STEEL TUBING AND PIPE
GREENVILLE, PENNSYLVANIA





Youngstown cold finished bars

help build quality into
 Elastic Stop® nuts



One of the most important operations in producing Elastic Stop nuts from Youngstown Cold Finished Bars. Here the bar is being cut to length to form the basic nut blank. Six spindle screws of the Automatic drill and ream the tap hole, cut and form the unclosed crown, drill and ream the insert well and finally, cut off the finished nut blank. The cold finished bar's quality must not vary as any hidden seams, pipes or center segregations could cause tooling and production breakdowns.

Youngstown Cold Finished Bars and Scrapless Nut Quality Wire play an important part in the "Elastic Stop Nut Story". They're the basic raw material used to produce these well-known self-locking fasteners familiar to almost every industry throughout the world.

These Youngstown products give Elastic Stop Nut Corporation of America long, trouble-free production runs. That's because they are quality-controlled throughout all of Youngstown's integrated steelmaking operations—from mining the iron ore to final cold drawing.

They give your operators the best chemical composition, physical structure and surface finish—a direct result of Youngstown's more than a half-century of quality steelmaking know-how. Why not make them your permanent specification for continuing high product quality and uniformity.

For more detailed information or metallurgical assistance, write or call our nearest District Sales Office today—or write directly to our General Office.



COLD FINISHED BARS
 AND SCRAPLESS NUT
 QUALITY WIRE



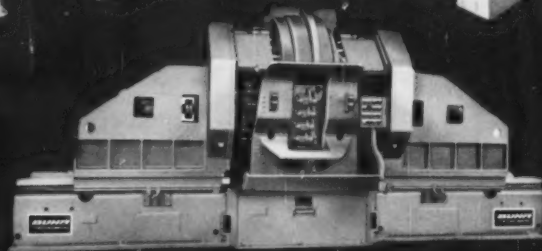
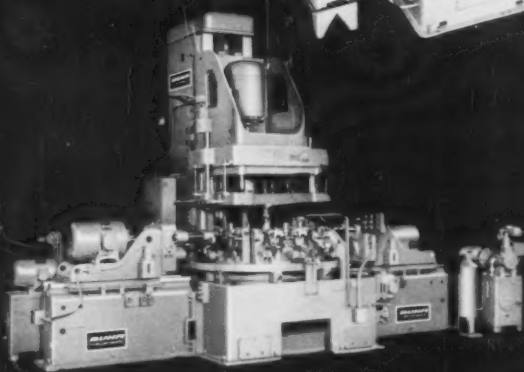
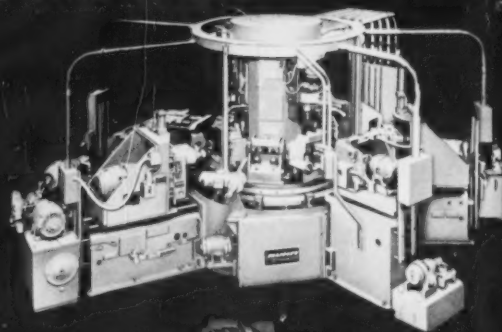
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Manufacturers of Carbon, Alloy and Yaloy Steel
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ACQUIRES SIDNEY

**assumes full control of producing
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of precision heavy-duty
metal working lathes...**



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SIDNEY...**

- 1** continue the present line of Sidney engine and precision toolroom lathes, as well as the Sidney Fluid Tracer in the conventional- and universal-type.
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SIDNEY... a fine name in lathes... will be even FINER !

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Aluminum anodizing?

**CHROMIC ACID?
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At any stage, from planning to production, your problems can *best* be solved by H-VW-M . . . the one company combining complete engineering service with a complete line of equipment, processes and supplies. For further information, write to Hanson-Van Winkle-Munning Company, Matawan, New Jersey. Offices in principal cities.



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New Continuous Heat Treating and Tempering Furnaces Insure Close Temperature Control

Produce 400 series stainless bars to uniform hardness requirements

Known as the quench and temper method, this new Drever Long Bar Furnace, recently installed at J & L's Stainless Steel Division in Detroit, insures a more uniform hardness in stainless steel bars. It can handle a variety of sizes and shapes from $\frac{1}{2}$ to $4\frac{1}{2}$ inches in diameter and up to 30 feet in length.

This furnace is designed so that it can be switched from a normalizing to a quench and temper operation without interrupting its continuous operation.

With the addition of this new furnace, J & L's Stainless Steel Division can now offer its customers the uniform hardness they require today in stainless steel bar stock

... just another reason why J & L is a leading producer of quality stainless steel bars.

This quality control, plus the ability to ship a wide range of finished stainless bar stock ... immediately from inventory ... is an unbeatable combination that J & L offers to its customers.

Why not write today for our latest stock lists, or for quotations on finished bars or billets?

Improve your Products with . . .

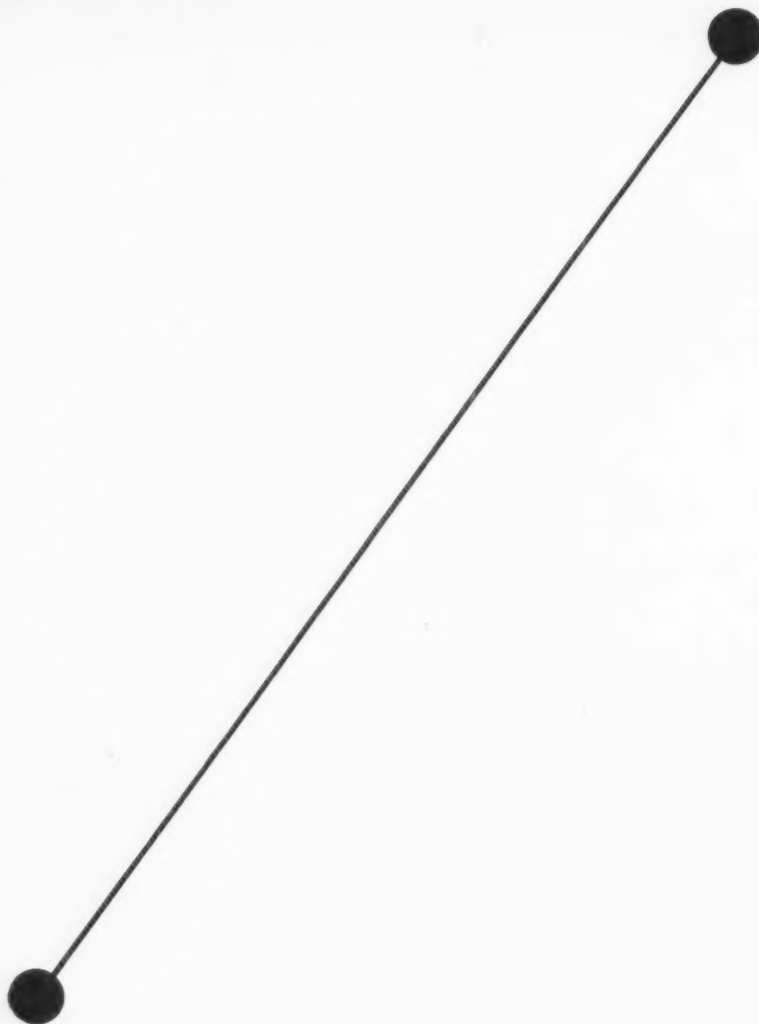
J & L **STAINLESS**
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STEEL CORPORATION

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VCA Engineering Sales and Technical Representatives will gladly study your problem and recommend the silicon products best suited to meet your requirements. That's because VCA produces *all* types and forms of silicon alloys from 25% ferrosilicon to silicon metal. In lump, crushed sizes and briquettes, and packed to suit your needs.

Remember — the lowest priced silicon product is not always the answer, for it may prove to be the most expensive in the end! Let us help you now.



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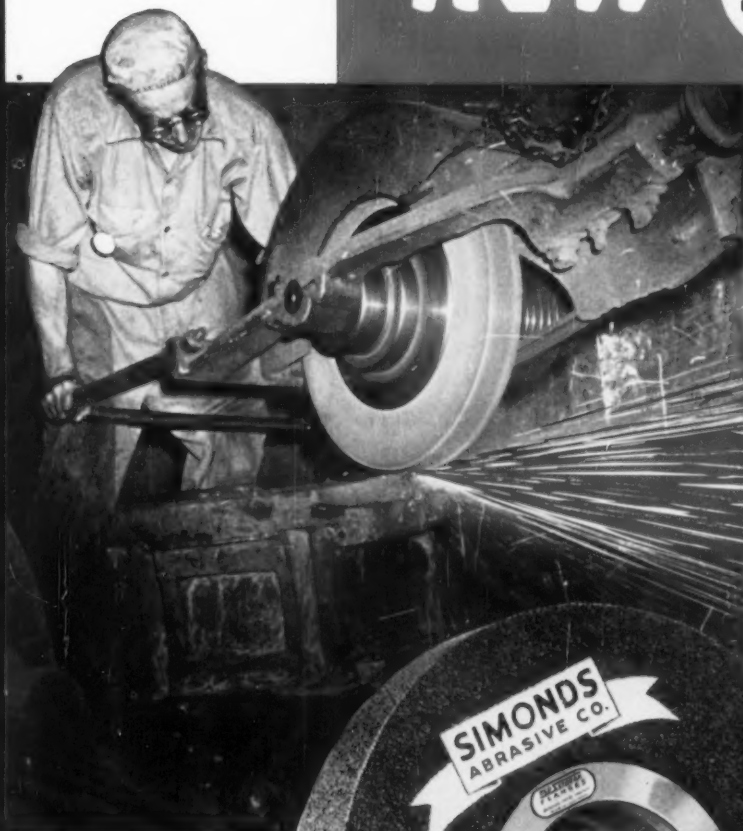
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stands and portable
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The life of a hard grade, plus the fast free-cutting of a soft grade! Every Simonds wheel made with new IL Bond has this ideal combination — because of the unique internal lubricating action of this new Bond — another Simonds improvement to bring you the best in grinding wheel performance. Write for Snagging bulletin ESA 62.



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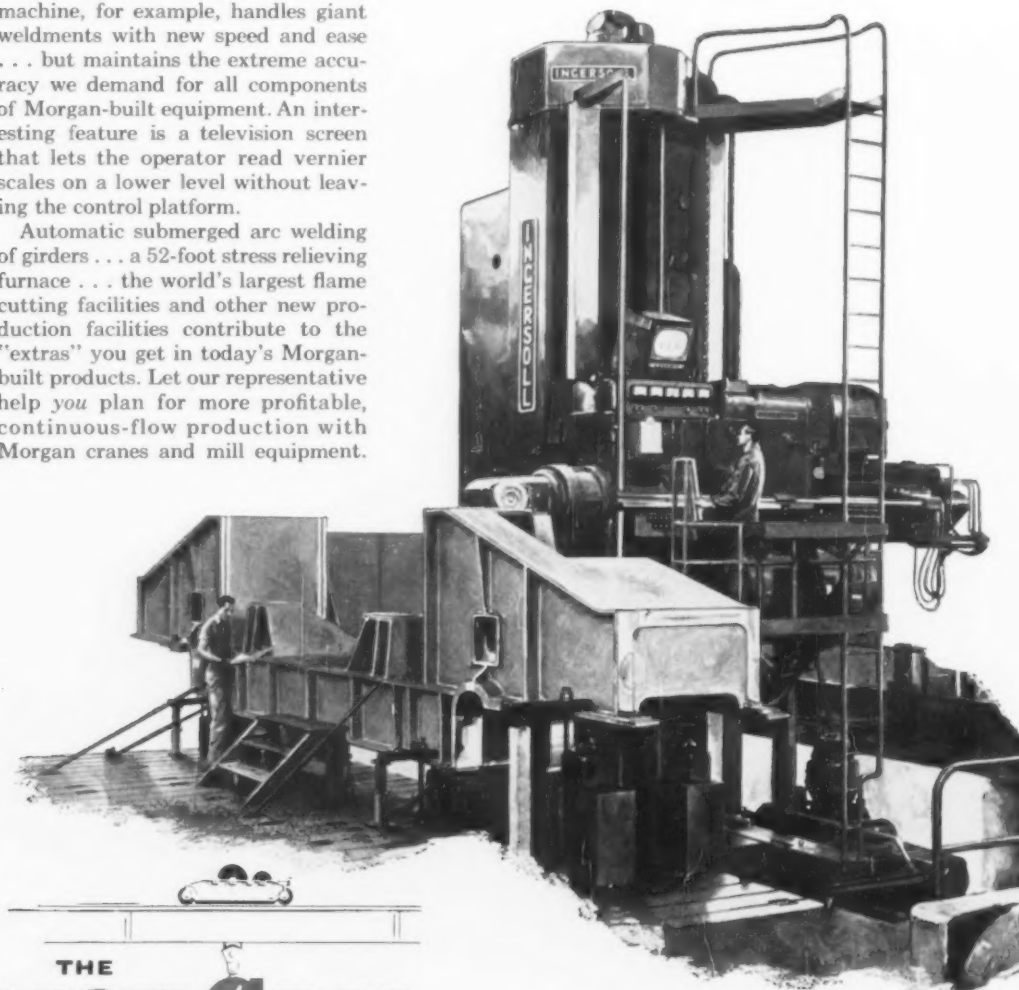
TV TAMES GIANT WELDMENTS

for Morgan Engineering cranes and mill equipment

New automation techniques put responsibility for precision manufacture of Morgan cranes and mill equipment in the hands of skilled technicians... plus exacting, efficient production facilities.

This 135-ton milling and boring machine, for example, handles giant weldments with new speed and ease... but maintains the extreme accuracy we demand for all components of Morgan-built equipment. An interesting feature is a television screen that lets the operator read vernier scales on a lower level without leaving the control platform.

Automatic submerged arc welding of girders... a 52-foot stress relieving furnace... the world's largest flame cutting facilities and other new production facilities contribute to the "extras" you get in today's Morgan-built products. Let our representative help you plan for more profitable, continuous-flow production with Morgan cranes and mill equipment.

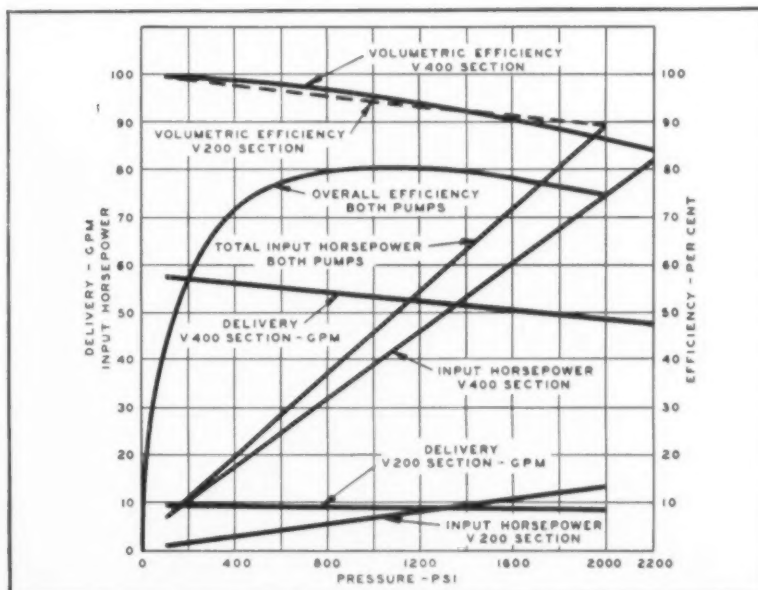


THE
MORGAN
ENGINEERING CO. *Alliance, Ohio*

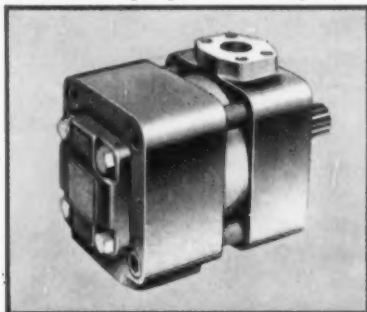
Overhead electric traveling cranes, gantry cranes,
open hearth special cranes, plate mills, blooming mills,
structural mills, shears, saws and auxiliary equipment.

On tractor shovels, scrapers, lift trucks, truck cranes, bulldozers, motor graders, front end loaders, ditchers, trucks, buses and many other types of mobile equipment . . .

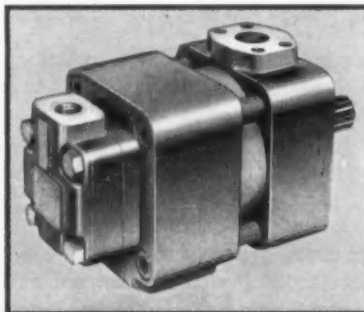
The High Efficiency of Vickers Balanced Vane Pumps Means More Work From Less Input Power



COMPARE the performance of this VICKERS Series V4200 double pump with any other hydraulic pump used on mobile equipment. The high overall efficiency in the operating pressure range is maintained throughout the long pump life (see right hand column for reasons). This performance is characteristic of all Vickers Vane Pumps . . . both single and double. (Above curves are in accordance with SAE test code except speed is 2000 rpm.)



Series V400 pump (single) is large section of double pump at right; performance characteristics are shown above. In addition to the advantages mentioned in the right hand column, Vickers Vane Pumps require minimum maintenance and are exceptionally compact. Their various mountings and optional pressure outlet connection positions provide greater application versatility. See pages 4-5, Bulletin M5101A.



Series V4200 double pump for operating two independent hydraulic circuits from one power source. In numerous mobile applications, this is desirable to eliminate all possible chance of one operation interfering with another . . . when necessary to operate two machine components simultaneously at different speeds and hydraulic pressures. See pages 6-7, Bulletin M5101A.

You can get more useful work out of a given engine when a Vickers Balanced Vane Pump is used in the hydraulic control system. Its exceptionally high volumetric and overall efficiency are available not only when the pump is new but also throughout its long life.

The performance curves at the left merit your careful consideration. Note that the overall efficiency is approximately 80% at operating pressures used. Compare this with the rapid decline in overall efficiency of the usual gear pump at higher pressures. This large difference means a very substantial saving in engine horsepower and fuel consumption. To do a given job, it often means that a smaller engine can be used. It further means less heating of the oil.

Vickers Balanced Vane Pumps have many other benefits for the user. Optimum running clearances are automatically maintained over the entire operating pressure range and throughout an exceptionally long pump life. Complete hydraulic balance eliminates pressure-induced bearing loads. Other bonuses are: automatic wear compensation, temperature adaptability, simple installation, and easier cold weather starting.

Millions of Vickers Vane Pumps are in daily use. For further information, write for Bulletin M5101A.

7856

VICKERS INCORPORATED

DIVISION OF SPERRY RAND CORPORATION

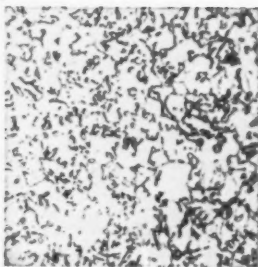
Mobile Hydraulics Division

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Application Engineering Offices: ATLANTA • CHICAGO
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carbon-restored steel meets tightest specs



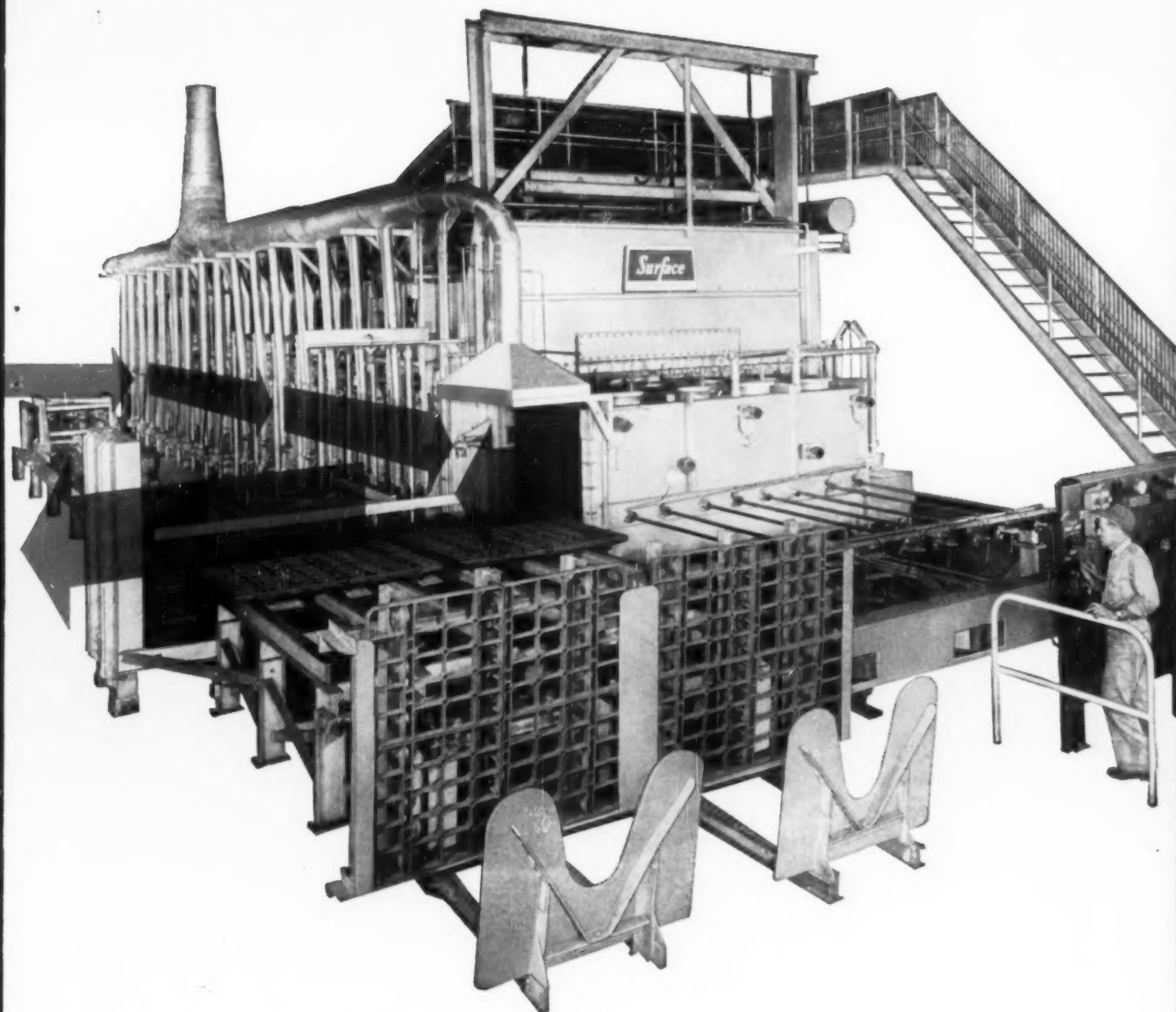
■ This steel mill easily meets the steadily tightened specifications of customers who demand stock with good surface finish, no "decarb," and uniform microstructures suitable for cold forming and automatic machining.

They do it by combining annealing and carbon restoration in a Surface continuous furnace. They get all the flexibility of cycle control they need with 6 zones, individually controlled. An RX[®] gas generator keeps the carbon potential of the furnace atmosphere in balance with the steels being treated. Automatic dew point recorders provide a continuous check on the atmosphere.

Production rates up to 1,000 tons per month make this furnace a profitable tool.

Again, Surface engineering transforms difficult specifications into profitable opportunities.

*Surface Combustion Corporation, 2402 Dorr Street, Toledo 1, Ohio.
In Canada: Surface Industrial Furnaces, Ltd., Toronto, Ontario.*



you can meet these specifications:

CYCLE ONE (sub-critical anneal)		CYCLE TWO (over-critical anneal)	
STEEL (AISI)	MAXIMUM-BRINELL	STEEL (AISI)	MAXIMUM-BRINELL
4042	160	4037	151
4140	170	4140	174
5140	166	8127	148
8740	170	8740	174

Cycle One production must show spheroidized structure. Cycle Two must show lamellar pearlite structure. Brinell hardness after annealing.

wherever heat is used in industry



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STRIPPIT *tooling versatility*

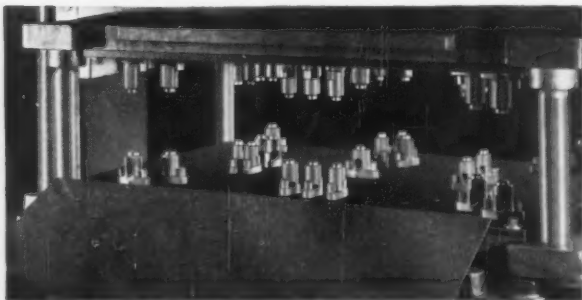
keeps presses working, not waiting!

Nothing to mount on the ram, nothing to align or adjust — just place your Strippit setup in the press and start the run.

That's how Strippit versatility pays off. Any good bench man can mount these independent self-contained punching and notching units in any template pattern within press capacity. New Strippit setups can be kept ready for the press, virtually eliminating down-time.

For flatwork, extrusions, structurals from the smallest gauge to 3/4" mild steel, Strippit gives you these extra advantages:

- The effect of quick-change dies without die-making or die-spotting
- Speed over drilling — plus no deburring
- Units re-usable over and over
- Readily removable punches and dies
- Ease, accuracy of template mounting — pilot pin centered on punch
- Each unit complete — permanently aligned, fully guided, self-stripping.



For unlimited feeding of work, Strippit Type CD and JD (heavy-duty) Punch and Die Assemblies are readily template-mounted to press ram and bed in any desired pattern.

Write today for all details and a demonstration by a Strippit mobile unit at your plant.

*Special tools made up to your specifications.
Warehouse facilities in Chicago and Los Angeles.*

WALES STRIPPIT COMPANY
202 Buell Road, Akron, New York

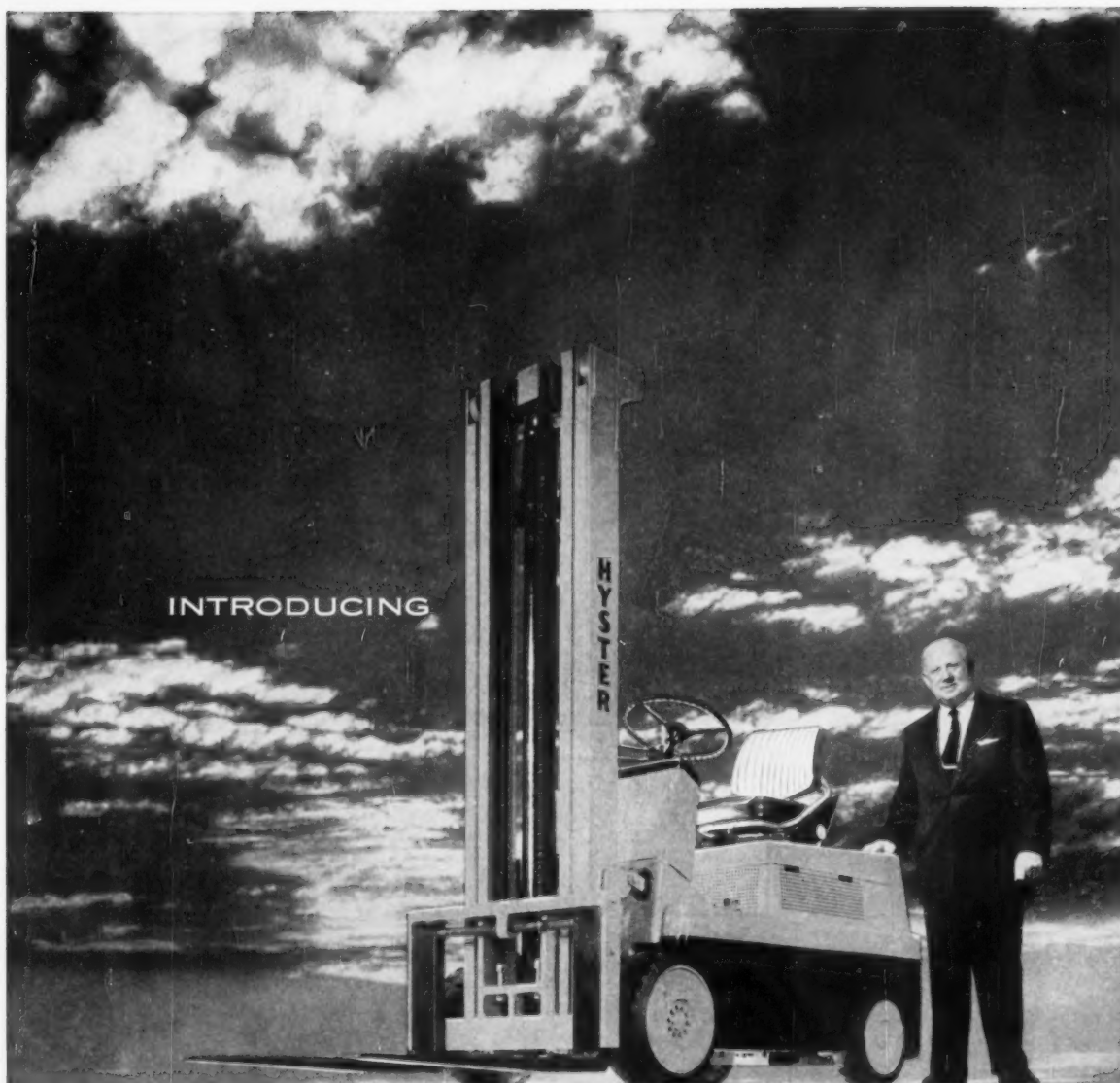


Manufactured in Canada by Strippit Tool & Machine Limited, Brampton, Ont.



One of a complete line of Strippit vertical and horizontal hole punching units in capacities from the lightest material to 3/4" mild steel. Wide choice of die heights, shut heights and throat depths.

Also, 90-degree Corner Notching Units in 3" x 3" and 5" x 5" sizes, plus V, Radii and many special shape notching units. Capacities to 1/8" in mild steel.



INTRODUCING

ERNEST G. SWIGERT, President, Hyster Company

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SAVER 30
3,000-lbs. Capacity



SPACE SAVER 40
4,000-lbs. Capacity



SPACE SAVER 50
5,000-lbs. Capacity



SPACE
SAVER 60
6,000-lbs. Capacity



SPACE SAVER 70
7,000-lbs. Capacity



SPACE SAVER 80
8,000-lbs. Capacity



Functionally styled
by Henry Dreyfuss.

THE FINEST CUSHION TIRE LIFT TRUCKS EVER BUILT

SPACE SAVER 60 SPACE SAVER 70 SPACE SAVER 80

This new series of cushion tire lift trucks is the crowning achievement of the finest engineering, industrial design and testing available today. The joint planning of Hyster engineers and Henry Dreyfuss, industrial designer, results in a series of 6,000, 7,000 and 8,000 lb. capacity trucks unequalled for productive maneuverability, operating economy and handling efficiency.

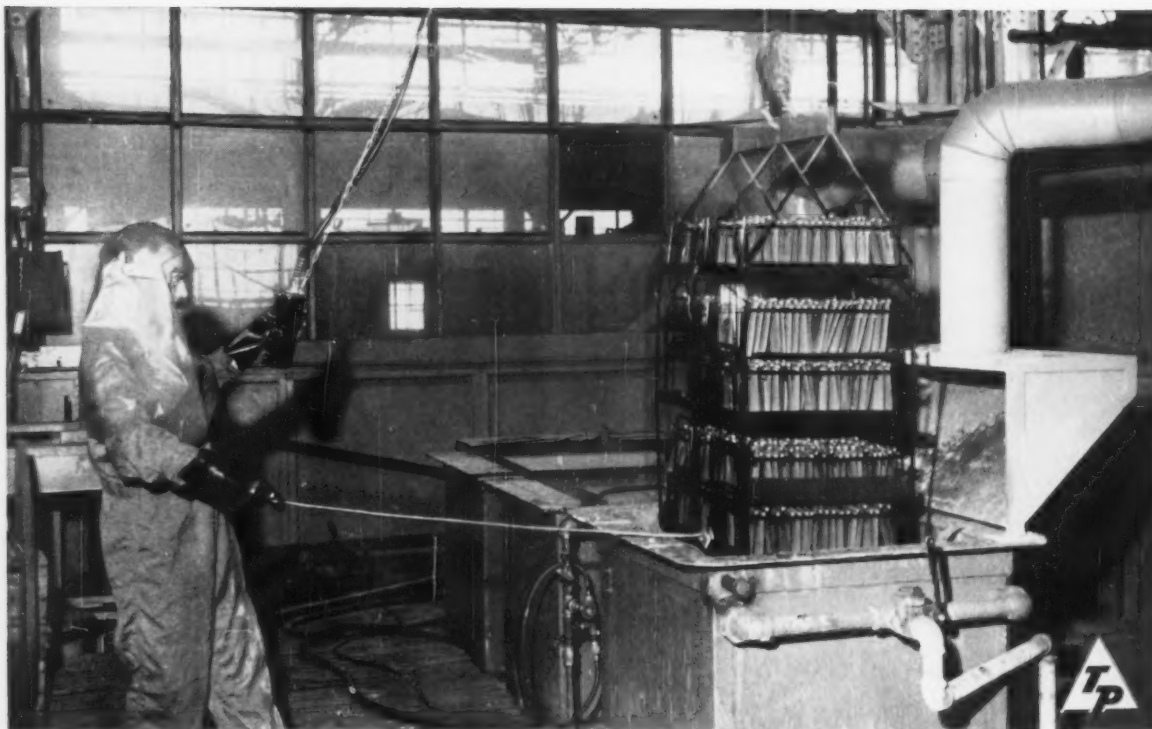
Prove to yourself why we say these trucks are, without question, the finest cushion-tire lift trucks ever built. Schedule a demonstration at your own plant, or see them today at any Hyster dealer store.

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World's foremost manufacturer of Industrial Trucks



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Peoria, Illinois • Nijmegen, The Netherlands
Sao Paulo, Brazil • Glasgow, Scotland
Sydney, Australia (licensee)



How Thompson Products saves \$9,750 a month descaling titanium parts in hot Virgo bath

In this plant of Thompson Products, Inc., titanium forgings become mirror-smooth blades for aircraft turbines. But first, workers must get rid of the tough black oxide scale that forms on the parts during forging and heat treating.

They used to *blast* scale loose with a special zirconium sand imported from half-way around the world. But the sand was expensive—\$10,000 a month. It had to be purchased and stored 4½ carloads at a time. Stacked in bags, it ate up valuable space—and made a mess when heavy bags burst.

Then this company called in a Hooker sales-service man who showed

how they could get the scale off *chemically*. He recommended Virgo Descaling Salt at a cost of only \$250 *per month* instead of \$10,000 for sand.

Parts come clean in 4 dips

Now titanium parts ride in stainless-steel baskets through four dip tanks—and come out with not a trace of scale. In five minutes in the first tank, molten Virgo salt at 850°F removes almost all of the stubborn scale. In successive dips, cold water removes the adhering molten salt, acid quickly removes the residual soft oxide and hot water rinses the parts clean.

The process descales stainless steel and other high-temperature alloys,

too—simply by raising temperature of the salt another 100 degrees. There's no attack on the metal itself at any stage.

It's easier now for inspectors to see tiny defects in the smooth, chemically clean surface of these parts; so quality control is better than before.

Maintenance costs are lower, too: just four dip tanks that need occasional replenishing with salt and acid.

Have you a tough scale problem? Perhaps a talk with a Hooker representative will open a way to substantial cost reductions for you. If you'd like to discover how, just drop us a note on your business letterhead.

HOOKER ELECTROCHEMICAL COMPANY

301 Union Street, Niagara Falls, N. Y.



DUREZ® PLASTICS DIVISION • NORTH TONAWANDA, N. Y.
NIALK® CHEMICALS • NIAGARA FALLS, N. Y.
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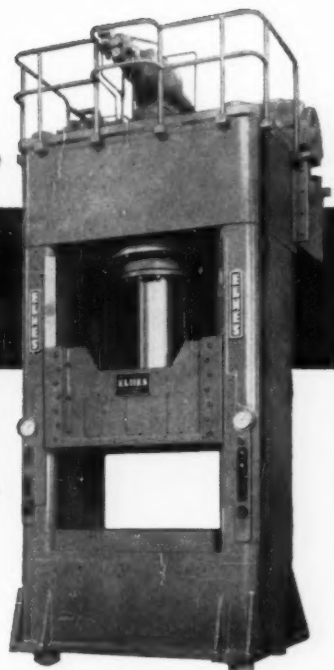
Sales Offices: Chicago, Ill.; Detroit, Mich.; Los Angeles, Calif.; New York, N. Y.; Niagara Falls, N. Y.; Philadelphia, Pa.; Tacoma, Wash.; N. Tonawanda, N. Y.; Worcester, Mass. In Canada: Hooker Chemicals Limited, N. Vancouver, B. C.



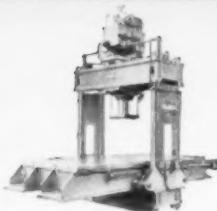
C-FRAME PRESS — for general purpose straightening, bending forcing, forming. Fast, flexible.

Elmes...

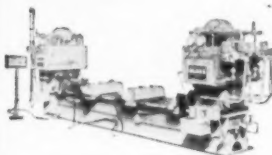
will "Job-Fit"
hydraulic press equipment



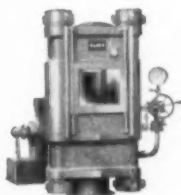
Drawing and Forming



TRAVELING HEAD STRAIGHTENING PRESS — custom-built to meet special requirements.

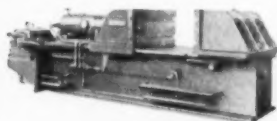


TUBE REDUCING PRESS — another unit custom-designed for a specialized type of production.



HOBBIING PRESS — a powerful tool for sinking hardened hobs into blanks of cold steel.

BULLDOZER — for heavy bending and forming. Optional choice of bed size, stroke, and speed.



to meet *your*
requirements...
exactly

Whether you're seeking improved and more economical press performance for your present metalworking production, or there's a development planning job to be done, you can count on Elmes to provide *the right press for the job*. Elmes builds a complete line of standard hydraulic presses for a broad range of metalworking operations—for drawing and forming, coining, forging, hobbing, bending, straightening, forcing, powder metal compacting, etc.

One of these standard Elmes® designs, "as is" or with simple modifications, may fit your needs exactly. Or, your requirements may be so special as to call for development of a "custom-built" press—a type of press designing and building which has long been an important part of Elmes service to industry.

Whatever your "pressing problem", *it will pay you to call in Elmes*. It just makes sense to take advantage of engineering knowledge, skill, and foresight backed by more than 60 years of leadership in specialized hydraulic service.

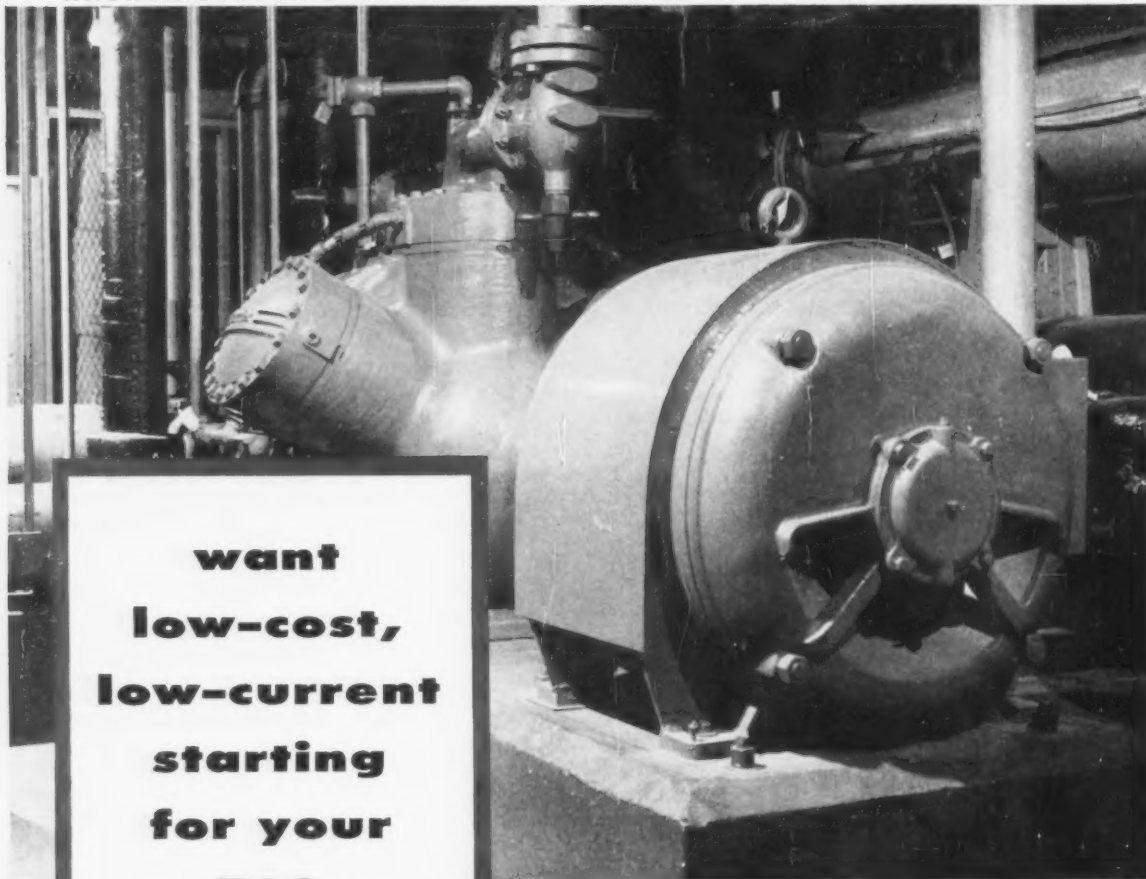
See your Elmes distributor, or write us direct. Recommendations and cost estimates will be supplied promptly.

Also a complete line of COMPRESSION and TRANSFER PRESSES for PLASTICS and RUBBER MOLDING

Elmes American Steel Foundries ENGINEERING DIVISION

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METAL-WORKING PRESSES • PLASTICS MOLDING PRESSES • PUMPS • ACCUMULATORS



**want
low-cost,
low-current
starting
for your
BIG
MOTORS?**



Type RP polyphase motor—
in ratings to 500 hp. with
increment type starter.

Specify Wagner Increment Motor-Starter Combinations

Part-winding starting is the simple, inexpensive way to limit the inrush of starting current in squirrel-cage motors up to 500 horsepower—and only the Wagner Increment Motor-Starter Combination gives you all these advantages:

LOW FIRST COST—Uses a standard Wagner Motor and a part-winding starter—no need for auto-transformers or resistors.

EASE OF INSTALLATION—Starter is compact and relatively light in weight, connections are simple and easy to make.

MINIMUM MAINTENANCE—The Wagner Motor requires only regular inspection, cleaning and lubrication—the starter needs very little attention.

APPROVED BY POWER COMPANIES—Meets all polyphase motor starting requirements of AEIC—EEI—NEMA—reduces voltage fluctuations—does not open the line during the starting period.

PROVED IN SERVICE—Wagner pioneered this Motor-Starter Combination—has been furnishing it for more than 18 years—its steadily increasing popularity is proof of its efficiency and dependability.

Why not take a look at Wagner Increment Motor-Starter Combination in operation? Ask your nearby Wagner Sales Engineer to show you an installation in your area. See how it works—judge for yourself, and let him help you select the combination that meets your requirements. Just call the nearest of our 32 branch offices, or write for Bulletins MU-128 and MU-195.

Wagner Electric Corporation
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ELECTROMET maintains a complete line of highest-quality ferro-alloys and alloying metals in all commercial sizes and grades.

Prompt shipment of ELECTROMET ferro-alloys is assured from our 7 plants and 9 warehouses conveniently located throughout the United States to serve you.

ELECTROMET's experienced field metallurgists are always available to assist you in using ferro-alloys more efficiently.

Contact any ELECTROMET office listed below for complete information about ELECTROMET ferro-alloys and metals.

ALLOYS AND METALS FOR EVERY NEED

Boron, Calcium, Chromium, Columbium, Manganese, Silicomanganese, Silicon, Titanium, Tungsten, Vanadium, Zirconium, "EM" Briquets.

Information about these and other alloys and metals is contained in our catalog, "ELECTROMET Ferro-Alloys and Metals."

For your copy write ELECTRO METALLURGICAL COMPANY, Division of Union Carbide Corporation, 30 E. 42nd Street, New York 17, N. Y. *In Canada:* Electro Metallurgical Company, Division of Union Carbide Canada Limited, Toronto.

**METALS DO MORE ALL THE TIME
... THANKS TO ALLOYS**

Electromet
FERRO-ALLOYS AND METALS



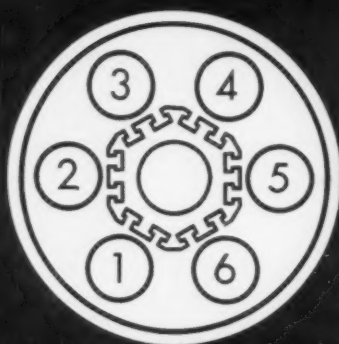
The terms "Electromet," "EM" and "Union Carbide" are registered trade-marks of Union Carbide Corporation.

THE IRON AGE, January 2, 1958



"We came down here to buy ELECTROMET alloys—
up home, everyone says they're out of this world."

a message to production-minded engineers
with automated equipment in mind



These multiple spindle diagrams are symbols of one of the earliest, simplest, and yet most efficient forms of automation the world has yet known. They represent circumferential automation, a design principle embodied in the development of the first automatic screw machine, built in 1893 by National Acme and inherent in all Acme-Gridleys since then.

don't overlook the advantages of
circumferential automation*

* Think of each spindle on an Acme-Gridley multiple-spindle automatic as a work station, and you will quickly see that here, too, is automation . . . *circumferential* automation. Here, as in all forms of automation, pre-sequenced operations are *performed in succession—and without manual attention*—to save time and cut costs in many ways.

Actually, circumferential automation goes all other forms one step better; rather than requiring a line of machines and transfer arrangements, Acme-Gridley's speedy, compact spindle arrangement *saves floor space, machine investment and man hours*.

Admittedly, multiple spindle operation is not the answer to all machining problems. Today however, production men are taking a closer look to be sure they are missing no bets. They cannot afford to be wrong tomorrow.

Is there a place for *circumferential* automation in *your* operation?
Let us help you find out.

National Acme

THE NATIONAL ACME COMPANY, 175 E. 131ST ST., CLEVELAND 8, OHIO • Sales Offices: Newark 2, N. J., Chicago 6, Ill., Detroit 27, Mich.

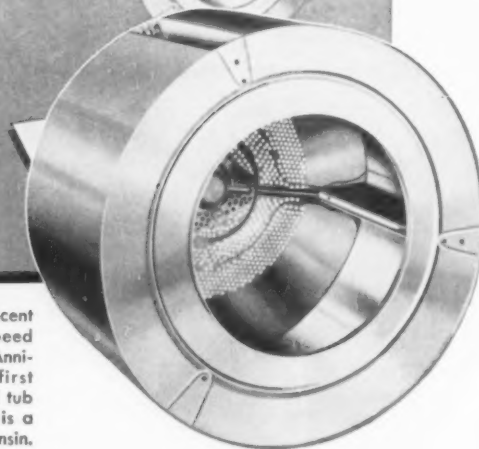
builders of the world's only complete line of
multiple-spindle, bar and chucking automatics

SPEED QUEEN

Royal Pair



New
STAINLESS STEEL
DRYER DRUM
Only Sverre Queen has it



Matching the leader in beauty and fashion quality is the new Golden Anniversary Dryer. It's the first dryer to bring you the many advantages of a Stainless Steel design. Now you can dry your clothes, as well as wear them, in smooth, gleaming Stainless Steel. See this incomparable Royal Pair at your Speed Queen dealer. For literature, write Speed Queen, a Division of McGraw-Edison Company, Ripon, Wisconsin.

REPUBLIC



World's Widest Range of Standard Steels

Out with Republic Stainless

Utilizes the plus-values of Republic ENDURO® Stainless Steel to gain a competitive edge

Speed Queen, first to use a stainless steel bowl-shaped tub in an automatic washer, now has designed an automatic dryer with a stainless steel drum.

Fabricated from Republic ENDURO® Stainless Steel, the tub and drum in Speed Queen's Royal Pair provide maximum protection for clothes in the washing and drying operation.

Stainless offers the greatest resistance to rust and corrosion of any commercial metal. And because ENDURO is solid stainless steel, there is no surface to wear away. There's never any danger of flaking, chipping, peeling or cracking. ENDURO's smooth, hard surface protects the finest and sheerest of fabrics.

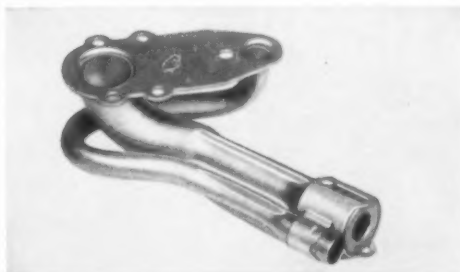
The inertness of stainless is another plus-value that Speed Queen has built into its new washer and dryer. It is neither affected by nor does it react with dyes, bleaches, soaps or detergents. That is one reason why textile manufacturers and commercial laundries have been using ENDURO equipment for years.

What about your product that needs to gain a competitive edge? Use Stainless to obtain freedom of design. Its extremely high strength-to-weight ratio permits use of thinner, lighter sections to reduce weight and bulk. Use Stainless for trim and brightwork. It has the strength to withstand the abuse of every day use. Use Stainless for functional parts. Strength, heat-resistance and corrosion-resistance make it the perfect metal for any application involving heat or cold. Use ENDURO to give your product sales appeal.

Republic metallurgists and engineers are available to assist you in selection, application and processing of stainless. No obligation for their services, just mail the coupon. Or contact your Republic ENDURO Stainless Steel Distributor.

STEEL

and Steel Products



RANGE BURNER MANUFACTURER STEPS OUT with Republic ELECTRUNITE® Welded Steel Tubing. Harper-Wyman Company uses it in forming lightweight, easy-to-clean venturi burner tubes. The company subjects ELECTRUNITE to a hairpin bend of 1/4-diameter radius, then a four-way crimp, followed by punching, notching and welding. Uniform, predictable ductility avoids stretch and collapse as tubing is severely bent and formed. Close tolerances of O.D. and I.D. avoid die and mandrel troubles. Our engineers will help you design ELECTRUNITE into your product to speed production, cut costs and improve performance. Mail the coupon for facts.



SOFT-DRINK DISPENSER MANUFACTURER STEPS OUT with Republic Electro Paintlok®. Ideal Dispenser Company uses Electro Paintlok for cabinets to provide an excellent paint-adhering surface even after severe forming operations. According to Ideal, "hot room" tests have proved it the most economical base material under temperature and humidity variations found in any part of the world. Sheets are shipped from the mill in prime condition for painting. For some products, only the final finish need be applied for full protection and attractive appearance. Send coupon for full details.

REPUBLIC STEEL CORPORATION

DEPT. C-4788

3104 EAST 43TH STREET • CLEVELAND 27, OHIO

☐ Have a Stainless Metallurgist call.

Send more information on:

☐ ENDURO Stainless Steel ☐ Electro Paintlok

☐ ELECTRUNITE Steel Tubing

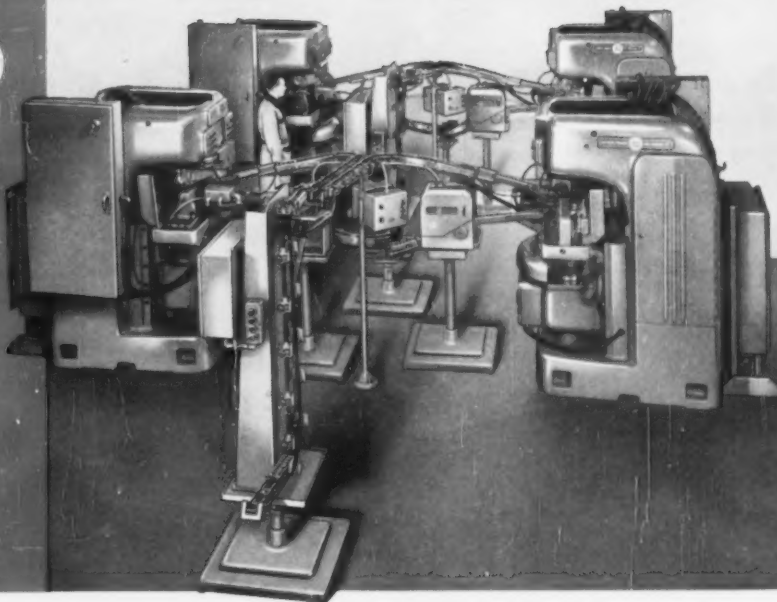
Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

**FULLY
AUTOMATED
GEAR
SHAVING
CAN ALSO BE
PERFECTLY
FLEXIBLE**



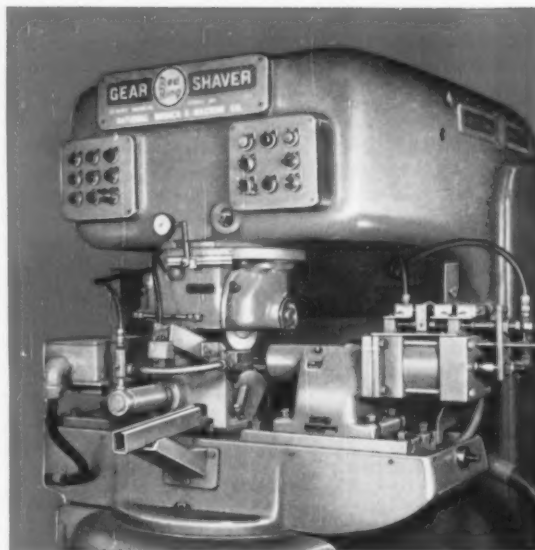
This fully automated installation shaves the split long pinion used in automatic transmissions. This pinion consists of two gear sections each of which is individually crown shaved. Output at full efficiency is 400 pinions (800 gear sections per hour).

The first pair of standard Red Ring Shaving machines processes one of the pinion sections. The second pair processes the other.

Automatic sizing gages perform a 100% check and reject any out-of-tolerance units.

Any individual shaving machine may be stopped at any time for cutter change or adjustment without interfering with the operation of the rest of the system. This is provided for by automatic switching in the feeder lines.

The flexibility of the supply and discharge lines greatly facilitate positioning the machines.



*Write for
further details.*

SPUR AND HELICAL GEAR SPECIALISTS
ORIGINATORS OF ROTARY SHAVING
AND ELLIPTOID TOOTH FORM

NATIONAL BROACH & MACHINE CO.

5600 ST. JEAN • DETROIT 13, MICHIGAN

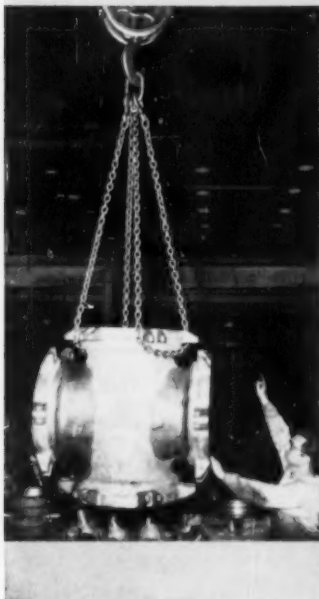
7788

WORLD'S LARGEST PRODUCER OF GEAR SHAVING EQUIPMENT

ACCOfor Better
Values

Acco Registered® Slings—Chain and Cable

▼ CHAIN



COMBINATION



▼ WIRE CABLE



ACCO—your first source for any sling for any job

Whatever your sling requirements, there's an ACCO Registered Sling to do your particular lifting job in the safest, most economical way possible. Your rigger knows why certain slings should be used to lift certain types of loads, depending on varying factors of shape, weight, material and finish. Sometimes chain slings are necessary; other times cable; and on certain lifts a combination of chain and cable slings are best.

Because sling work requirements do vary from job to job, make certain that all your slings are precision-made under uniform conditions of quality control and pre-tested before they leave the factory. Only ACCO Registered Slings can give you this assurance...in the widest range of sizes and styles from any single source.

In addition, you get the latest technical improvements in ACCO

Registered Slings. For example, there's the new shaped Master Link now available without extra charge on all ACCO Registered Slings. This new link, an exclusive development of ACCO engineers, gives 18% greater resistance to distortion with no increase in weight. Just one more quality bonus you get from ACCO Registered Slings.

Each of these slings is factory proof-tested at a load of no less than twice its rated capacity. Only after a sling has passed this rigorous test is it given the ACCO tag and certificate of registration.

Tell your distributor you prefer ACCO Registered Slings.

WHAT "ACCO REGISTERED" MEANS

- 1 The best material
- 2 Unit safety factor (on bodies, rings, links, hooks)
- 3 Proof test of complete sling to twice the working load limit
- 4 Actual field service test of each design
- 5 Metal identification ring or tag on each sling
- 6 Signed Registry Certificate with each sling

AMERICAN CHAIN & CABLE BRIDGEPORT, CONN.

Atlanta, Boston, Chicago, Denver, Detroit, Houston, Los Angeles,
New York, Odessa, Tex., Philadelphia, Pittsburgh, Portland, Ore.,
San Francisco, Wilkes-Barre, Pa., York, Pa.
In Canada: Dominion Chain Co., Ltd., Niagara Falls, Ont.

ACCO



A TREMENDOUS SUCCESS

because they combine Safety with Wearer Appeal!

AO 2-TONE ULTRASCOPIC SAFETY SPECTACLES

Plant eye protection programs *really work* when glasses like these guard workers' eyes! That's why safety directors everywhere have acclaimed the new AO F9700 2-TONE ULTRASCOPIC — and backed their enthusiasm for these safety glasses with a deluge of orders!

1. They know that they are buying a true safety frame as well as true safety lenses with *every* pair. A frame that will hold lenses and eyewire with a vise-like grip if hit severely. (Non-safety frames cannot provide this protection.)
2. They know that they are buying safety glasses

with an eye-appeal that makes men and women workers exclaim "That's for me!"

You can see that the AO F9700 2-Tone Ultrascopic is *handsome* eye protection. You can also see that it is *safe* eye protection by the AO plaque on the frame front which indicates a true safety frame. That's why we say give your workers the SAFEST, the SMARTEST, the FINEST!

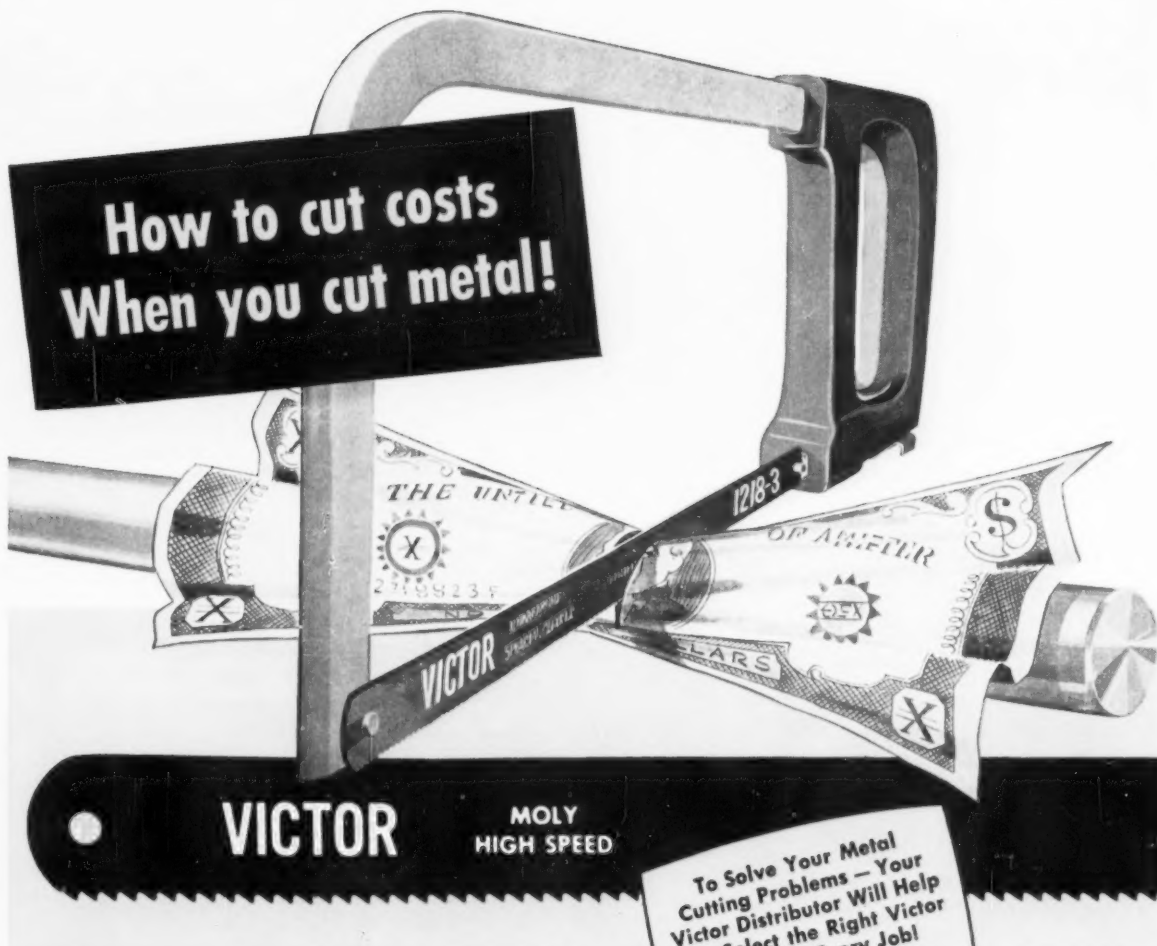
- 2-tone onyx on clear crystal plastic frame
- matching spatula temples
- 6 Curve Super Armorplate clear, medium Calobar, dark Calobar and extra dark Calobar lenses. Also available with clear Plastolite lenses.

American  Optical
COMPANY
SAFETY PRODUCTS DIVISION

Always insist on the AO Trademark
on lenses and frames.

SOUTHBRIDGE, MASSACHUSETTS
Branches in Principal Cities

How to cut costs When you cut metal!



To Solve Your Metal
Cutting Problems — Your
Victor Distributor Will Help
You Select the Right Victor
Blade For Every Job!

EFFICIENT TOOTH DESIGN...Means faster and easier metal cutting

The correct tooth design in Hack Saw Blades means more efficient, more economical cutting. Not only do blades last longer, do a more precise cutting job, but job time cost is also reduced.

That's why Victor makes sure that the teeth on every Victor Blade are uniform and properly set. By design the Victor Blade will not bind when cutting. Hand hack saw blades are available with 14, 18, 24 and 32 teeth per inch—power blades, 3, 4, 6, 10, 14 and 18 teeth to the inch. In either case, Victor offers a superior blade for any cutting job.

REMEMBER THESE 5 VITAL COST-CUTTING POINTS WHEN YOU ORDER SAW BLADES:

- 1 **UNIFORMITY** — Quality must be consistent...in every blade.
- 2 **HARDNESS** — Blades must be heat treated and tempered to the proper degree.
- 3 **EFFICIENT TOOTH DESIGN** — For fast and efficient cutting.
- 4 **BALANCED SET** — For clearance and accuracy of cut.
- 5 **CLEAR MARKINGS** — For easier, quicker identification.

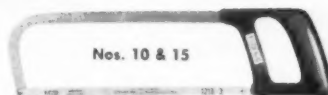
AND REMEMBER:
VICTOR GIVES YOU ALL 5!



VICTOR

SAW WORKS, INC. • MIDDLETOWN, N.Y., U.S.A.
Makers of Hand and Power Hack Saw Blades, Frames
and Metal and Wood Cutting Band Saw Blades

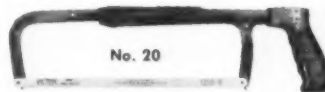
No. 10 — Yellow
molded handle.
Shaped for com-
fort. Almost in-
destructible!



Nos. 10 & 15

Patented Lever-Lock positions, tensions blades *automatically*. No. 15 — Red molded handle, chrome-plate finish. Same features as No. 10.

No. 20 — Gunmetal
Finish, features ad-
justable pistol-grip
Frame, Lever-Lock
for extra-easy
blade change.



No. 20

FREE — FOR THE SHOP... the Victor Metal Cutting Chart — an invaluable on-the-spot guide for shop metal workers.

FREE — FOR YOU... Victor's Handy METAL CUTTING GUIDE... packed with valuable information on blade types, cutting techniques... feeds and speeds... plus important general metal cutting information.



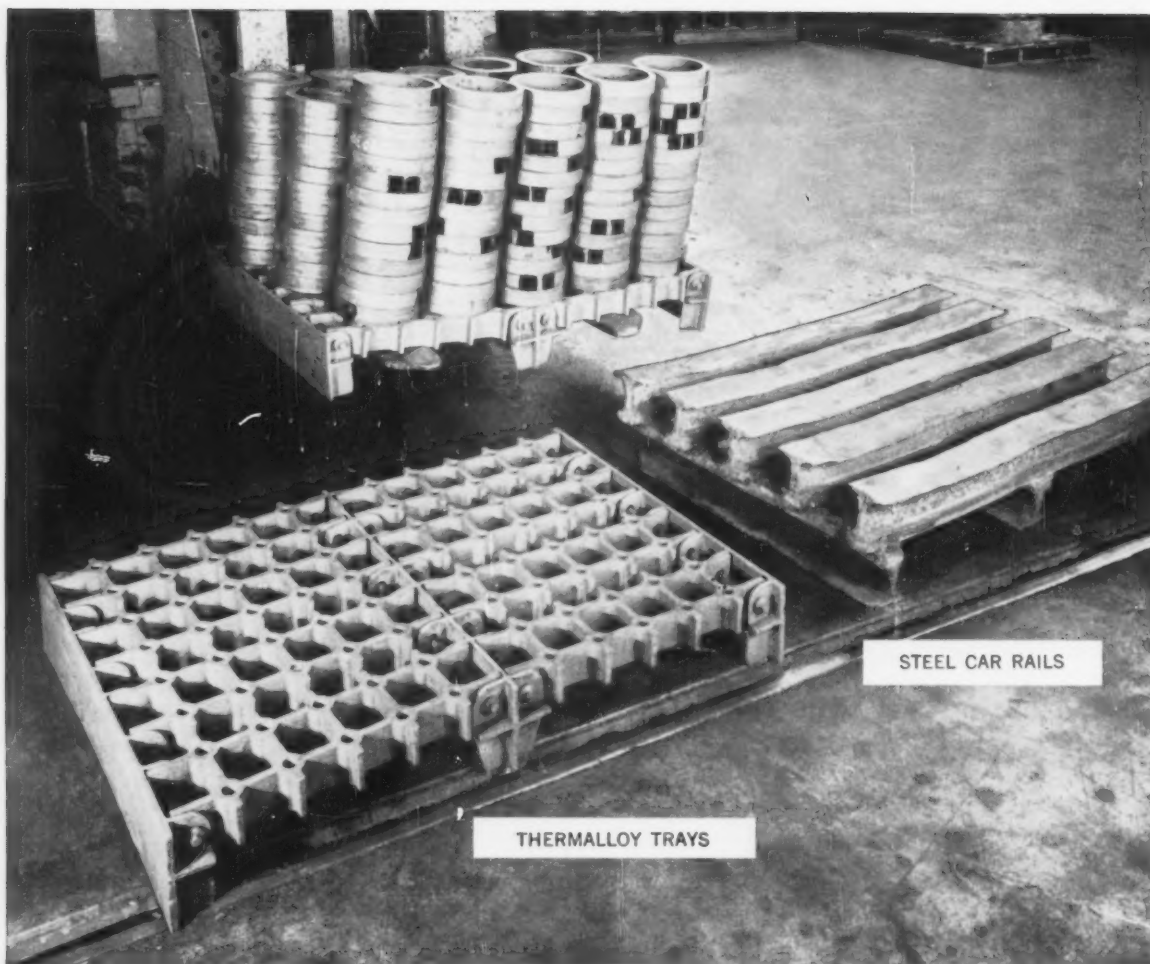
VICTOR SAW WORKS, INC.
Middletown, N. Y., U. S. A.

- ☐ Please send me the Victor Metal Cutting Chart
☐ Please send me the Victor Metal Cutting Guide

Name _____ Title _____

Address _____

City _____ Zone _____ State _____ 4810



Thermalloy* Heat-Resistant Trays Cut Costs for SKF Industries

At SKF Industries in Philadelphia, steel forgings are annealed in a car-type furnace at temperatures between 1450 and 1650 degrees F. Steel car rails were used to support the forgings in the furnace. But these warped and scaled after short service and became useless.

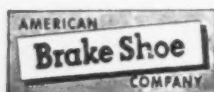
At the same time, SKF tried the specially designed trays of Thermalloy "30" shown above. These trays have given *six times the service life* obtained from the rails—and are still in use, with many more months of service left. In a cost comparison with the steel rails, SKF found that the

Thermalloy trays were less expensive, considering *only* their service life to date.

Thermalloy heat-resistant alloys and Electro-Alloys' design know-how are providing longer service life in scores of heat-treat applications and are saving money for users.

Whatever your heat-treat problem, it pays to contact Electro-Alloys. For further technical information on Thermalloy trays and fixtures, call your nearby Electro-Alloys representative or write for Bulletin T-227. Electro-Alloys Division, 9011 Taylor St., Elyria, Ohio.

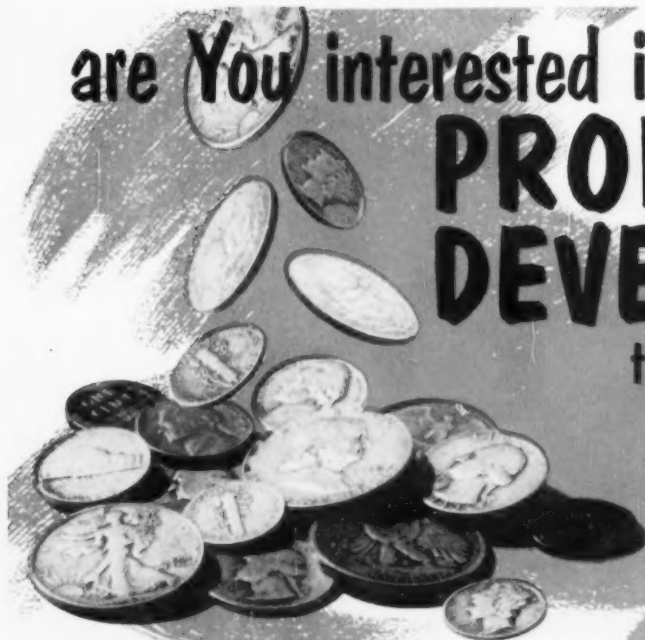
*Reg. U. S. Pat. Off.



ELECTRO-ALLOYS DIVISION Elyria, Ohio

are You interested in **PROFIT DEVELOPMENT**

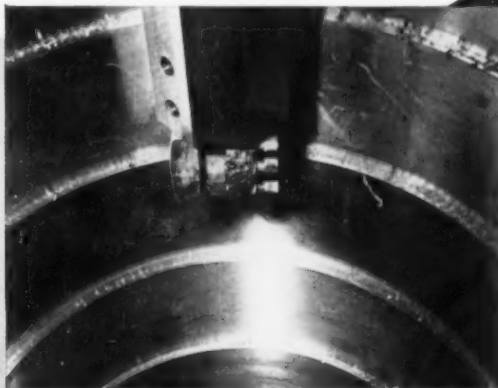
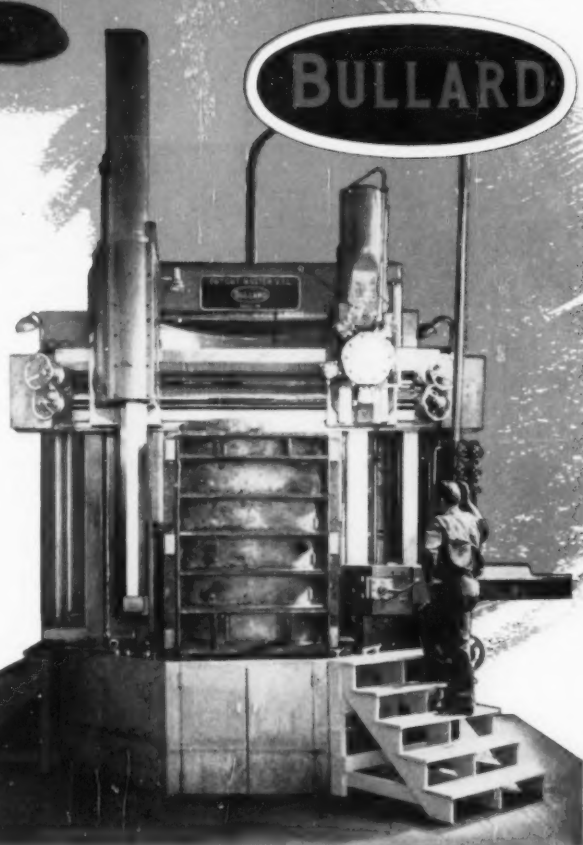
through reduced
machining time
and Lower Costs . . .



The new 66" Bullard Cut Master, Model 75 purchased by E.D. Jones & Sons Co., Pittsfield, Mass., has reduced from 65 to 48 hours the machining time required for a 4,000 lb. stainless steel piece used in a paper-making machine.

The Bullard Cut Master V.T.L., Model 75 line offers many features and advantages to help you — cut costs when cutting metal.

The part, 68" high, formerly had to be machined in three operations. Now, with an extension on the 62" Ram, a table speed of 9.6 r.p.m., feed of .0208 and $\frac{1}{8}$ " depth of cut, it is possible to machine the entire depth in one operation.



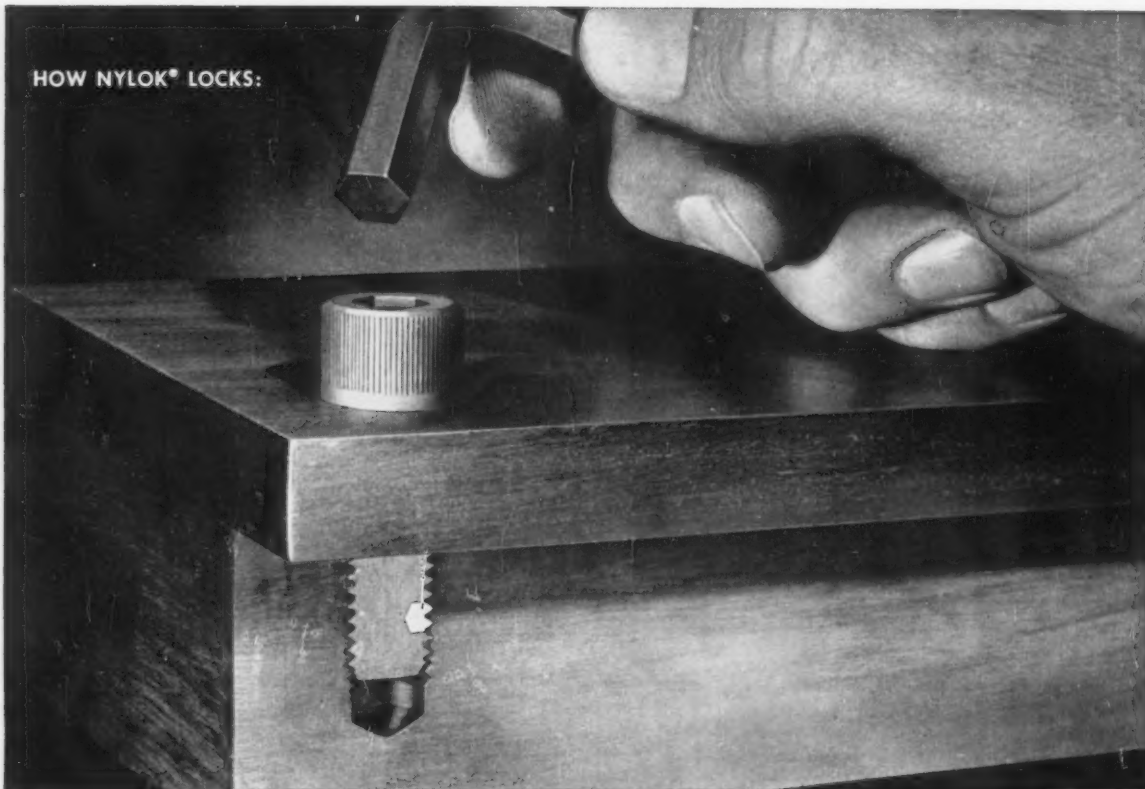
Close-up showing step boring and facing operation with 370 grade carbide tool.

Complete details are available from your nearest
Bullard Sales Office or Distributor or write

THE BULLARD COMPANY

BRIDGEPORT 9, CONNECTICUT

HOW NYLOK® LOCKS:



LOCKED! The tough, resilient nylon pellet keys itself into the mating threads. It forces threads together, and locks the screw securely.

NEW—a complete line of self-locking UNBRAKO socket screw products that won't work loose

They simplify design and save production time

UNBRAKO socket screws are now available embodying the Nylok self-locking principle. Nylok provides a truly practical new solution to the problem of making screws self-locking.

You save production time when you build products with self-locking UNBRAKOS. And you get greater simplicity in design with less bulk and weight. The number of parts you must assemble to achieve full locking action is reduced to the absolute minimum. Lockwashers under screw heads are no longer necessary. Costly wiring of cross drilled heads is eliminated. So are cotter pins and complex multiple set screw installations.

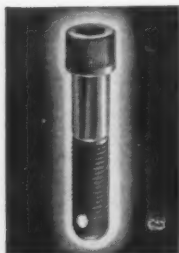
Self-Locking UNBRAKOS are completely reusable. They have uniform locking and installation torques—with no galling or seizing on mating threads. They successfully withstand temperatures from -70° to 250°F . And, on properly seated screws, the pellet acts as a liquid seal.

Self-locking UNBRAKO socket screws come in a complete range of standard sizes and materials. See your authorized industrial distributor. Technical data and specifications are detailed in Bulletin 2193. Write us for your copy today. Unbrako Socket Screw Division, STANDARD PRESSED STEEL CO., Jenkintown 17, Pa.

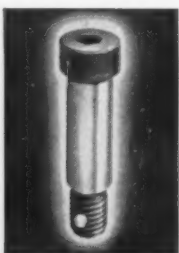
We also manufacture precision titanium fasteners. Write for free booklet.

UNBRAKO SOCKET SCREW DIVISION

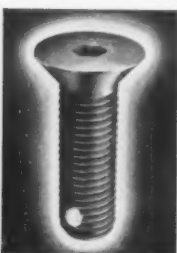
STANDARD PRESSED STEEL CO.



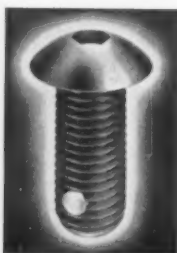
Socket head cap screws. Standard sizes #6 to 1 in.



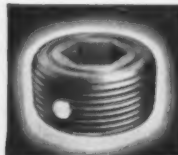
Socket shoulder screws. Standard sizes $\frac{1}{4}$ to $\frac{3}{4}$ in.



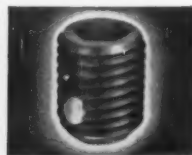
Flat head socket screws. Standard sizes #6 to $\frac{3}{4}$ in.



Button head socket screws. #6 to $\frac{3}{4}$ in.



Socket pressure plugs. Standard sizes $\frac{1}{4}$ to $1\frac{1}{4}$ in.



Socket set screws. All standard point types. #6 to 1 in.

SPS

JENKINTOWN PENNSYLVANIA

PLYMOUTH®

Power on the rails for every job!

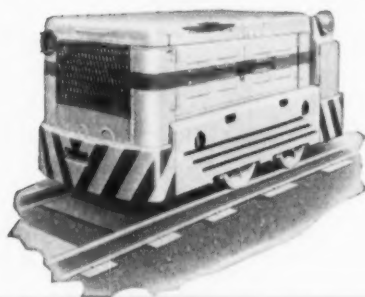
Here's the lineup of well-known Plymouth power in models from 3 to 70 tons . . . narrow or standard gauge . . . Gasoline or Diesel . . . mechanical or Torqomotive Drive . . . Diesel-Electrics. Records of users show Plymouth's economy, efficiency, dependability. Find out how these profit characteristics can improve your operation and cut costs.



Send brief outline of your operating needs and problems for engineering analysis and recommendations.

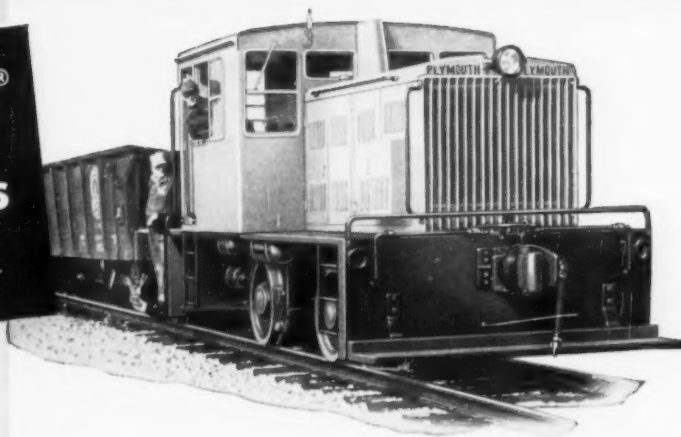
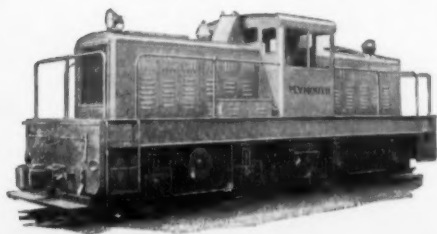
Plymouth Locomotive Works Division of
THE FATE-ROOT-HEATH COMPANY
Dept. A-2, Plymouth, Ohio

PLYMOUTH® LOCOMOTIVES WITH TORQOMOTIVE DRIVE

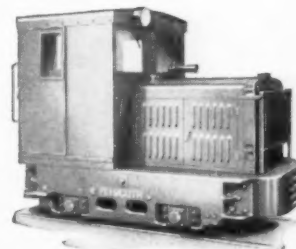
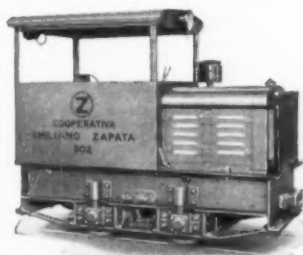


MINE-O-MOTIVE 5, 6, 7, 8, or 10 Tons Torqomotive® Drive. First Diesel-powered locomotive to operate in American coal mines, approved under Schedule #22, U.S. Bureau of Mines.

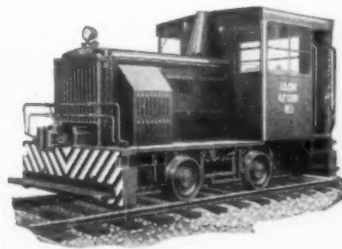
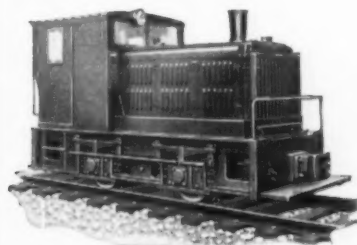
SERIES DE—25, 45, 50 Tons, Diesel-Electric Drive.



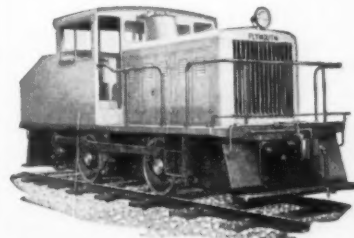
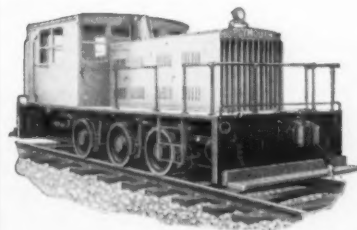
SINCE 1914 Plymouth Locomotives have been used for heavy hauling and switching jobs. They have proven themselves in year after year service with rock bottom economy, maximum availability, minimum down time. It takes a locomotive like Plymouth, ruggedly built, with plenty of power, and Torqomotive control, to solve your switching and spotting problems efficiently, economically, and for many years to come.



SERIES R&T (left)—3, 3½, 4 Tons, Gasoline or Diesel, Mechanical Drive, Compact for short turns, tight places. **SERIES F** (right)—5, 6 Tons, Gasoline or Diesel, Mechanical or Torqomotive® Drive. Low center of gravity, short wheelbase.



SERIES D (left)—8, 10 Tons, Gasoline or Diesel, Mechanical or Torqomotive Drive, Cast or Welded Frame. **SERIES J** (right)—12, 14, 16, 18, 20 Tons, Gasoline or Diesel, Mechanical or Torqomotive® Drive. 4- or 6-wheel Drive.















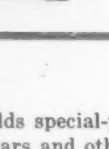
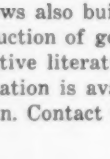
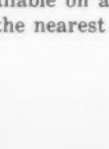

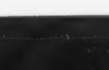
SERIES M & W (left)—25, 30, 35, 40 Tons, Gasoline or Diesel, Mechanical or Torqomotive® Drive, 4- or 6-wheel Drive. **SERIES KC & KH** (right)—45, 50, 65, 70 Tons, Mechanical or Torqomotive® Drive, Diesel only. Heaviest duty, direct drive.

*Torqomotive Drive: Plymouth transmission coupled to automatic torque-converter.

FELLOWS GEAR

CUTTING

GEAR SHAPERS

	SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER	MAX. DIAMETRAL PITCH	MAX. FACE WIDTH	MAX. STROKES PER MIN.
	both	yes	3" FINE-PITCH		3/4"	2000
			3 inches ext. 2 inches int.	40 steel, 30 brass		
	both	yes	No. 4GS		2"	635
			6 inches	5/7 spur, 6 hel.		
	both	yes	7-TYPE*		1 1/2" ext., 1" int.	450
			7" spur, 6 1/2" hel.	6 spur, 6/8 hel.		
	both	yes	7A-TYPE		2" ext., 1 1/2" int.	450
			7" spur, 7" hel.	5/7 spur, 6 hel.		
	both	yes	No. 10 ROTARY		3" ext., 3" int.	500
			12 inches	3/4 spur, 5/7 hel.		
	both	yes	6A-TYPE		5" ext., 3" int.	300
			18 inches	3/4 spur, 5/7 hel.		
	both	yes	No. 12GS		4" ext., 4" int.	550
			12 inches	3/4 spur, 5/7 hel.		
	both	yes	36-TYPE		6" ext., 6" int.	300
			36 inches	3 spur, 4/5 hel.		
	both	yes	120-INCH		8" ext., 8" int.	148
			120 inches	2 spur, 4 hel.		

*Max. P.D. internal—5 1/2"

GEAR HOBBER

NO. 12 GH2 HELIGUIDE

Spur and Helical, Max. O.D. 12". Max. face width, spur, 6"; helical, depends on helix angle and diameter. Max. diametral pitch 4. Hob speeds 123 to 430 R.P.M.

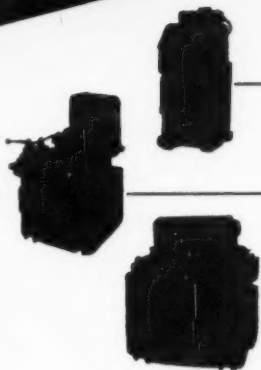
Fellows also builds special-purpose machines for production of gears and other related items. Descriptive literature, technical data and price information is available on all types of equipment shown. Contact the nearest Fellows office.

THE
PRECISION
LINE

Fellows

PRODUCTION EQUIPMENT

FINISHING



SHAVING MACHINES

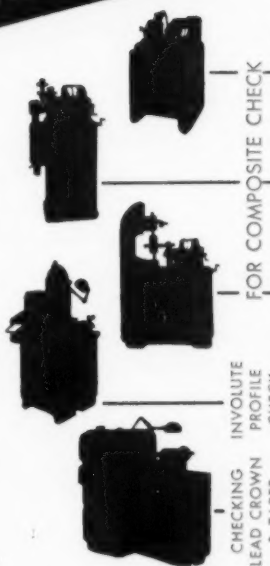
SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER	MAX. DIAMETRAL PITCH	MAX. FACE WIDTH	MAX. SPREAD OF CENTERS
No. 4 FINE-PITCH					
both	ext. only	4 inches	20	1 inch	12 inches
No. 8 "FULL-TOOL"					
both	yes	8 inches	4	2 1/2 inches	**
No. 11 INTERNAL					
both	int. only	***	6	1 1/2" up to 10P; 1", 12 to 16P	***

Also 12", 18" and 24" machines for externals only.

**Depends upon work-holding fixture

***Depends upon design of gear

INSPECTION



FOR COMPOSITE CHECK

INVOLUTE
PROFILE
CHECK

CHECKING
LEAD CROWN
& TAPER

SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER
No. 4 FINE-PITCH RED LINER		
both	yes	4 inches
No. 8M RED LINER		
both	yes	***
No. 20M RED LINER		
both	yes	18 inches
No. 12M INVOLUTE MEASURING		
both	yes	12 inches
No. 12H LEAD MEASURING		
both	yes	12 inches

Nos. 24M Involute and 24H Lead Measuring Instruments with capacity of 24 inches

***Depends upon design of gear

Fellows Injection Molding Machines

In each of three capacity ranges, Fellows plastic molding machines are your key to extra profit through high-speed, reject-free, fully automatic operation.



MODEL 3—125

3 oz. capacity, 45 pounds per hour, 600—840 cycles per hour (dry run), maximum mold size 12" x 17".



MODEL 6—200

6—9 oz. capacity, 75 pounds per hour, 490—650 cycles per hour (dry run), maximum mold size 15" x 21".



MODEL 12—350

12—20 oz. capacity, 150 pounds per hour, 700 cycles per hour (dry run), maximum mold size 20" x 31 1/2".

Gear Production Equipment

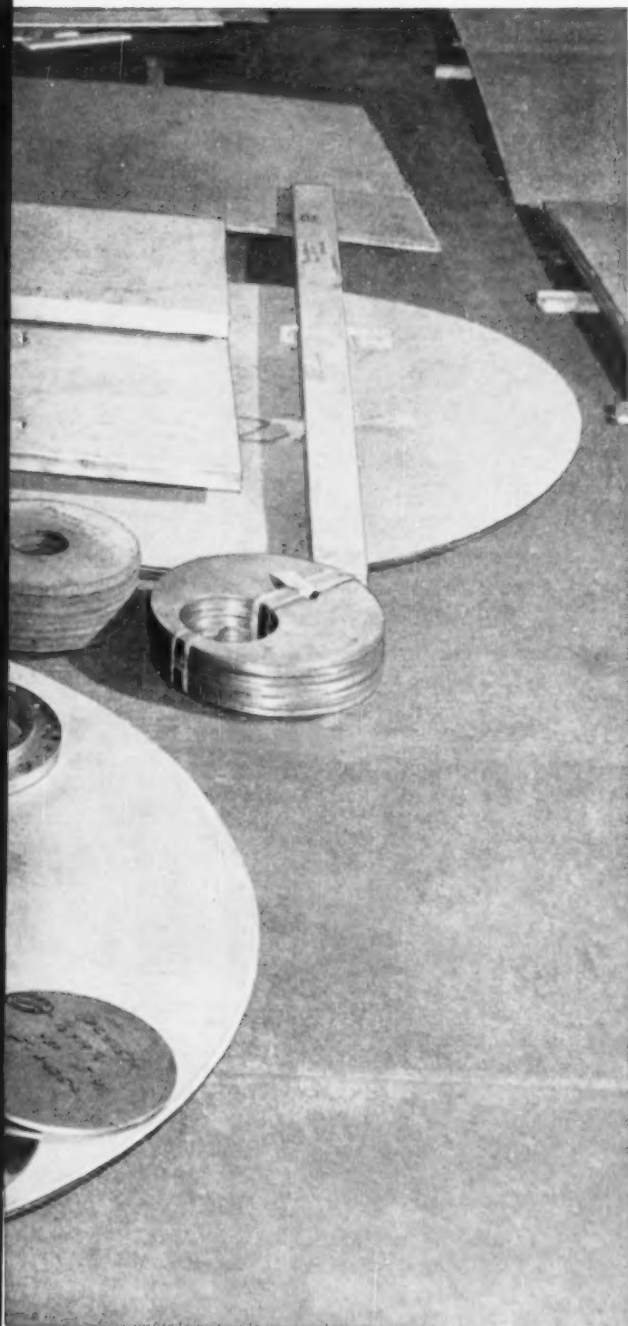
THE FELLOWS GEAR SHAPER COMPANY,
78 River Street, Springfield, Vermont.
Branch Offices: 1048 No. Woodward Ave., Royal Oak, Mich.
150 West Pleasant Ave., Maywood, N. J.
5835 West North Avenue, Chicago 39
6214 West Manchester Ave., Los Angeles 45



12"x 2" Disc or 200"x 132"x 2" Plate

... Carlson is your **ONE** source for **ALL**
stainless steel components

STAINLESS STEEL PLATES • PLATE PRODUCTS • HEADS • RINGS



Check your drawings and you may find that you require all of the stainless steel items shown here—plates, heads, tube sheets, discs, forgings, flanges, rings, special patterns, bars, and sheets (#1 Finish) in the heavier gauges. When you buy all these material components from one source you save time, effort and money.

Your assembly costs are kept to a minimum when you use Carlson's abrasive cut material. Cleaner edges mean less true-up time on the job. There is no heat-affected zone because little heat is developed during the cutting. Fabrication is easier and the finished product is of the highest quality, more dependable in use.

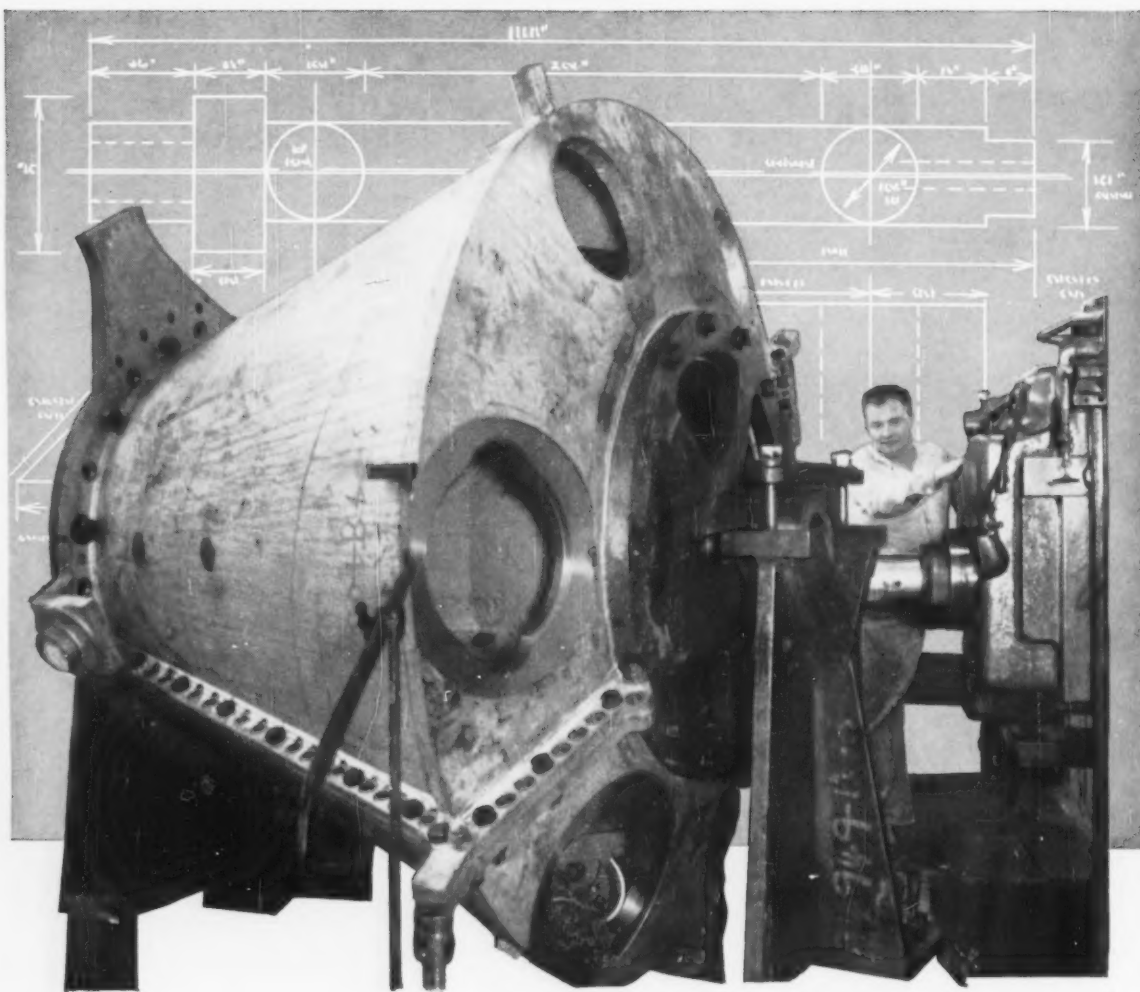
Who pays freight on "offcuts" you can't use? No one, when you use Carlson's service for cutting plate to shape, ready for your fabrication. Plate is sheared, sawed, flame or abrasive cut and machined to your specifications. Eliminating freight charges on excess material lowers your costs.

There's the matter of delivery which also means time and money to you. As specialists in stainless steels, Carlson has the diversified equipment and the technical and practical knowledge to produce the plate or shapes you want, the way you want them with delivery as promised.

Stainless Steels Exclusively
CARLSON *Inc.*
 THORNDALE, PENNSYLVANIA

District Sales Offices in Principal Cities

DISCS • FORGINGS • FLANGES • BARS AND SHEETS (No. 1 Finish)



"TAILORING" STEEL

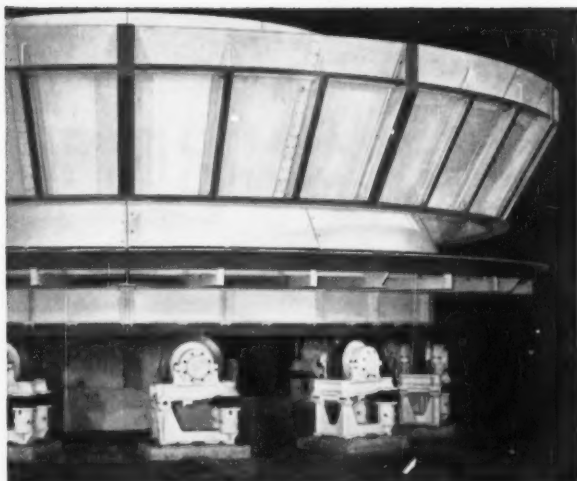
Many machines and pieces of special equipment must be fitted to their individual jobs in modern industry with the precision that a custom tailor devotes to making a suit for an individual customer. Maintaining the skill, experience and modern equipment that can accomplish such "tailoring of steel" to special needs has always been a matter of policy and pride at Sun Ship.

Machining special cylinders—as shown above—or drilling condenser tube sheets . . . boring a cylinder liner . . . making small parts . . . planning and

building the special-purpose machinery that modern industry needs—such are typical jobs in the historic and versatile Wetherill plant, the machinery building unit of Sun Ship's integrated plant.

Since Sun Ship's foundation, in 1916, the spirit of keeping pace with progress in the various fields we serve has helped build our reputation for precision and reliability. On any problem of machinery production that you may face, you are invited to consult with our Sales Engineering Department.

Sun
SHIPBUILDING & DRY DOCK COMPANY
ON THE DELAWARE SINCE 1916 CHESTER, PA.



THE HEAVIER THE LOAD...

the more you need HYATTS . . . because straight cylindrical roller bearings will carry far more load, size for size, than any other anti-friction type. Here HYATTS support *one million pounds* on a 50-foot sinter cooler.

THE HIGHER THE SPEED...

the more you need HYATTS . . . because they're built from superior steels, with precise control of internal clearances to guarantee smooth trouble-free performance in critical applications like locomotive traction motors.



Cylindrical

THE MORE YOU NEED



HY-ROLL BEARINGS



Today's more compact machine designs, which must often accommodate higher speeds and loads in less space than ever before, are showing up the shortcomings of limited-capacity bearings. That's why more and more manufacturers are turning to HYATT Hy-Rolls—the straight cylindrical roller bearings that can carry *more radial load in less space*. Ask your nearest HYATT Sales Engineer for recommendations—he can help you solve your problems! Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.; Pittsburgh; Detroit; Chicago; and Oakland, Calif.

THE RECOGNIZED **LEADER** IN CYLINDRICAL BEARINGS

HYATT

HY-ROLL BEARINGS
THE "WORKHORSES" OF
MODERN INDUSTRY



the trend is to **THOMAS** *for*
PRODUCTION BENDING

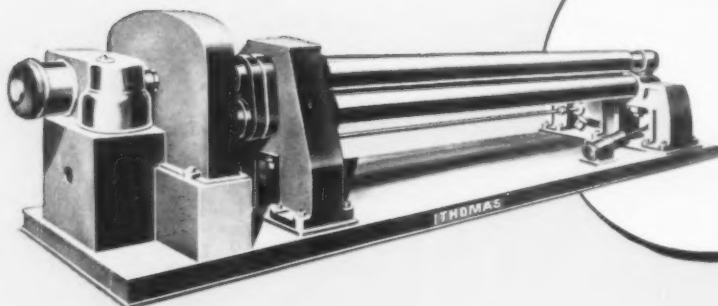
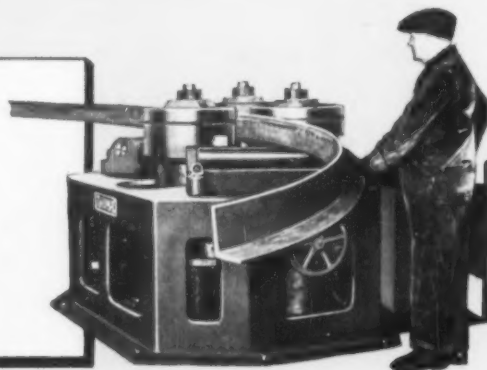


Plate Bending

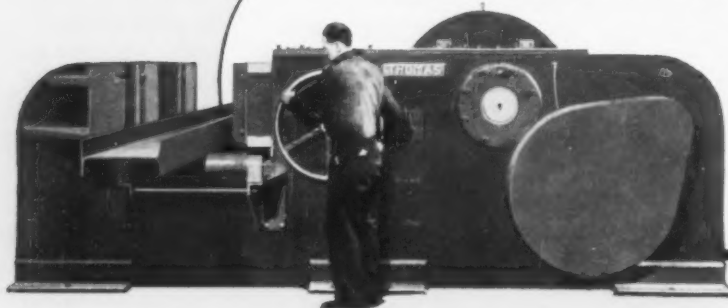
The Thomas line of Initial or Pinch Type Plate Rolls is comprised of twelve sizes of all steel machines completely modern in design. Features include enclosed drive running in oil; power adjustment and power drop-end.

Angle Bending

Thomas All Steel Angle Rolls are built in both vertical and horizontal styles, and capacity range is from 2 x 2 x 1/4" to 6 x 6 x 7/8" angles. Shapes other than angles may also be bent by using special rolls.



Bending and Straightening



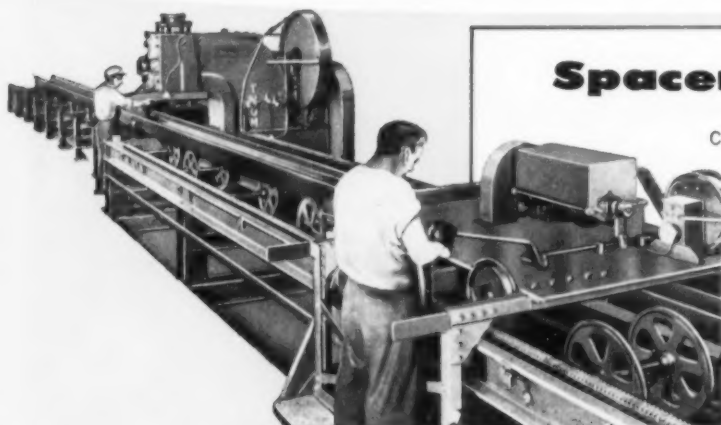
Thomas All Steel Bending and Straightening Machines, for cold working of structurals; Bars; Billets; Rails and other shapes, — built in six sizes — from 50 to 400 tons.

The machines shown are but a few of the types Thomas builds. If you have an equipment problem which involves Bending, Shearing, Pressing or Punching call on us.

Our Engineers are available for consultation without obligation.

PUNCHES • SHEARS • PRESSES • BENDERS • SPACING TABLES

the trend is to **THOMAS** *for*
PUNCHING and SHEARING



Spacer Punching

Complete elimination of layout costs is a major saving when Thomas Spacing Machines—either Motorized Indicator or Full Automatic — are used. Additional advantages are greatly reduced material handling; faster punching and greater accuracy.

Detail Punching

Thomas builds Detail Punches in a wide range of sizes. These, too, have all the modern design features such as Push Button Clutch Control; Anti-Friction Bearings; Steel Gears and Air Counterbalance.

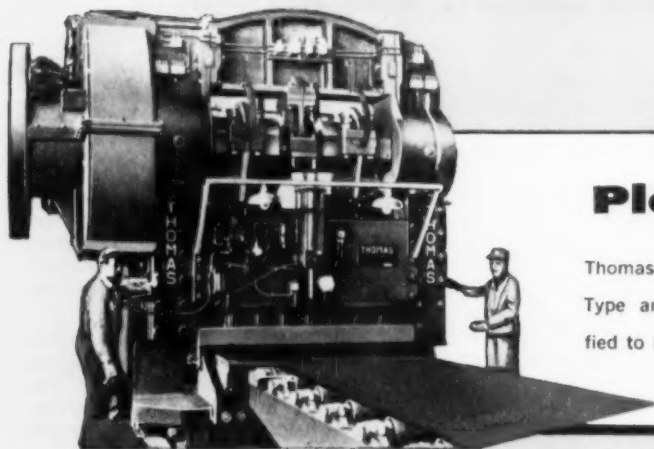
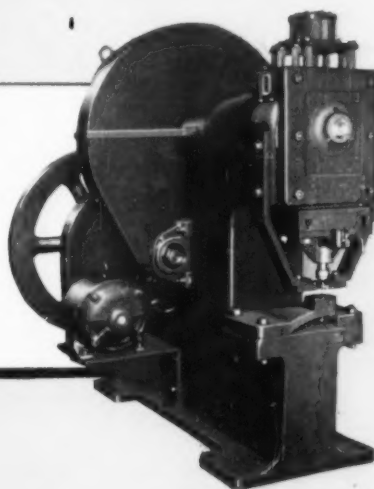


Plate Shearing

Thomas Plate Shears are of the Heavy Duty Mill Type and are individually designed or modified to meet individual customers' requirement.

Thomas also builds BAR Shears, BILLET Shears, Double ANGLE Shears, Wall DRILLS and other machines for the structural fabricator.

THOMAS
MACHINE MANUFACTURING CO.

PITTSBURGH 23, PA.



Storage bins into which sand ingredients are conveyed by a Fuller-Kinyon Conveying System. Note the pipe-line system which permits ingredients to be conveyed into their respective bins.

One of two Fuller-Kinyon Pumps which convey sand ingredients to storage bins and from bins to mixers.

FULLER-KINYON CONVEYING SYSTEM HANDLES THREE DIFFERENT MATERIALS EFFICIENTLY, WITHOUT WASTE

To reduce costs and speed up handling of foundry sand ingredients with minimum waste, General Steel Castings Corporation, Granite City, Illinois, installed a Fuller-Kinyon Conveying System.

Here's what it does for them—

The system unloads corn flour, silica flour and bentonite from hopper bottom cars by means of Fuller-Kinyon Pumps which convey these materials through pipe lines to a number of storage bins. The flexibility of the system makes it possible to unload cars in a fraction of the time that would be required manually, *and*, waste due to spillage is eliminated. Two pumps used in the operation can be moved on narrow gage tracks for spotting under cars or bins. One pump is used mainly for unloading and delivery to storage—the other for delivery from storage to

supply bins above the mixers. However, it is possible to unload cars and reclaim from storage simultaneously. Where bins are located so that they cannot discharge directly to a pump, an F-H Airslide® conveys from bins to the pump.

Prior to the Fuller installation, material was received in bags and manually unloaded, stored and transported to the mixers. It figures—*costs were much higher*. Now, waste has been eliminated! Another important feature—the company has realized extra savings by purchasing materials in bulk.

Fuller air-conveying systems are in operation in hundreds of plants throughout industry, cutting costs and increasing profits, day in and day out. The next time you have a materials-handling problem, why not get in touch with Fuller . . . chances are you will also profit.


Visit us at the National Plant Maintenance and Engineering Show, Chicago, January 27-30, Booths No. 959-961



FULLER COMPANY
122 Bridge St., Catasauqua, Pa.

SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
Birmingham • Chicago • Kansas City • Los Angeles • San Francisco • Seattle

P-168
4038



69.5 out of every 100 GRAND RAPIDS
SURFACE GRINDERS sold, are purchased
by firms already owning one or more —
30.5 by new customers.

Once you've enjoyed the advantages
of a Grand Rapids Grinder in your plant,
chances are, like so many present users,
you'll surely want more of them.



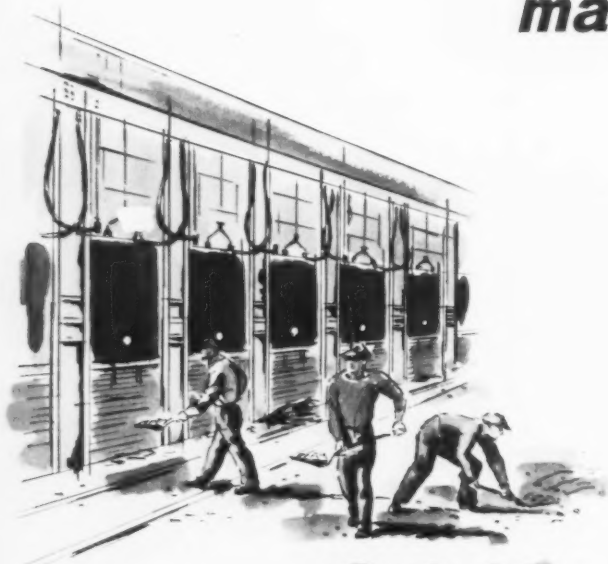
Write for 24-page
book that
tells you why.



GALLMEYER & LIVINGSTON CO.
400 Straight Ave., S.W., Grand Rapids, Mich.

When you need wire...

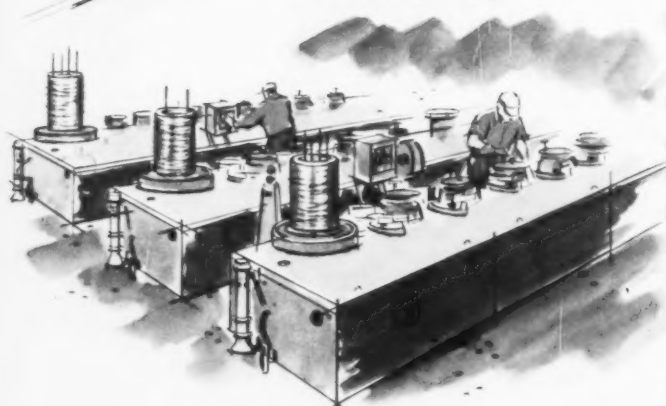
make CF&I YOUR



New, improved facilities

CF&I's wire plants throughout the nation have been modernized to provide even greater benefit to customers for all types of wire. Open hearth capacity has been increased—rolling mills completely restyled—new wire drawing machines have been added—enlarged tempering and patenting furnaces installed.

Modern packaging methods



To supply CF&I Wire to customers in the type of package that best meets their requirements, we have new spoolers, steel strapping machines and additional packaging equipment. We can supply wire in continuous lengths on reels, "spiders", pallets, or in fibreboard (pay-off pak) containers.

This equipment, plus the skilled craftsmanship of our metallurgists and mill men, enables us to meet the most exacting specifications and to provide faster deliveries to wire users everywhere.

Whether you order in small lots or by the carload, you are certain of receiving prompt, dependable service—in damage-free (DF) cars, too, when requested. Let us know your requirements.



SOURCE OF SUPPLY

Here is a partial list of the many types of carbon steel wire manufactured by CF&I:

Grades

low carbon
annealed
flat and shaped
medium high carbon
high carbon
flat and shaped
oil tempered
spheroidized

Finishes

bright dry drawn or
lime bright
bright grease drawn
cadmium coated
coppered
extra clean smooth bright
galvanized
liquor
white liquor

Standard Types (partial list)

aircraft cord
bee
bobbin ring
bobby pin
bookbinder
broom
brush
casing
clip
concrete reinforcing tie
cotton pin
curtain spring
die spring
fine & weaving
fuse
Gamma spring
garment hanger
glass netting
hair pin
hat
hose, reinforcement
hose, mechanical
hose, vacuum
lock spring
lockwasher
manufacturers' drawn
mattress

merchant
nail
oil tempered
picker tooth
picture cord
pin ticket
regulator
rope
safety pin
screen
shaft, flexible
Signal Corps
snake fishing
spiral binding
spring
square
stapling
staple
stone
tie
twisted & laid
upholstery
valve spring
weaving
welding
Wiseco Iron



Non-returnable spiders

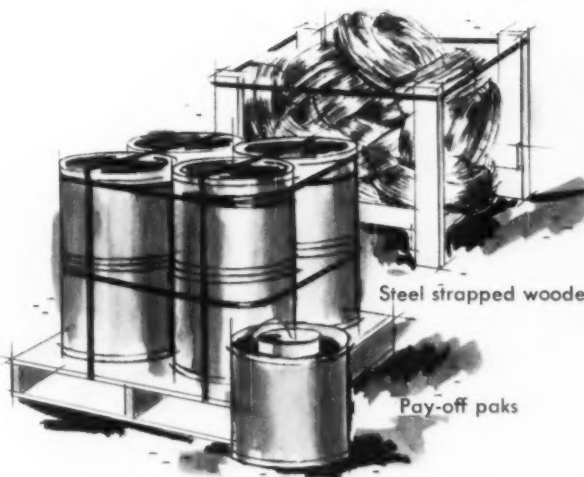
(500-700 lbs. capacity)



Reels

(500-800 lbs. capacity)

Steel strapped or paper wrapped coils



Steel strapped wooden rack

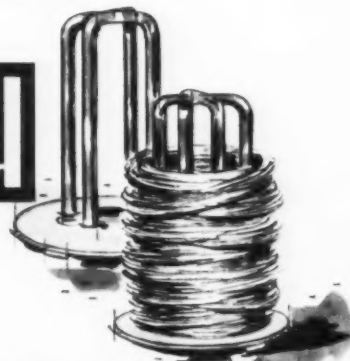
Pay-off paks

CF&I-WICKWIRE WIRE

THE COLORADO FUEL AND IRON CORPORATION

THE COLORADO FUEL AND IRON CORPORATION—Albuquerque • Amarillo • Billings • Boise • Butte
Denver • El Paso • Ft. Worth • Houston • Kansas City • Lincoln (Neb.) • Oklahoma City • Phoenix • Pueblo
Salt Lake City • Wichita • PACIFIC COAST DIVISION—Los Angeles • Oakland • Portland • San Francisco
San Leandro • Seattle • Spokane • WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia • CF&I OFFICES IN CANADA: Montreal
Toronto • CANADIAN REPRESENTATIVES AT: Calgary • Edmonton • Vancouver • Winnipeg

5687



Returnable spiders

(2000-4000 lbs. capacity)



Jobs that "couldn't be done" before...

NOW easily handled with

The NEW **KENNAMETAL***

ENCASED

Kendex* Boring Bars

If you have been having boring-bar troubles, here are some experiences that will interest you:

... At one of the nation's largest steel mills, the shop was unable to complete the contour boring of even a single steel tube, because of extreme chatter of the steel boring bar. A Kennametal encased Kendex boring bar was substituted ... and the chatter was completely eliminated.

... At another plant, holes were being bored with a steel boring bar equipped with pilot. The holes were roughed at 950 RPM with a 1-inch per minute feed, and finished at 2-inches feed. Tool life averaged ten holes per grind. The tool cost per piece averaged \$0.49 each for more than 4400 pieces over an 18-month period. Furthermore, at least 50% of the holes had to be reamed either to correct size or taper.

When a Kennametal encased Kendex boring bar was substituted, feeds

*Trademark

were almost doubled—to 2 inches per minute roughing and 3½ inches per minute finishing. Tool life has been increased to 70 holes per cutting edge on roughing, and 80 holes per edge on finishing, with a tool cost per piece of \$0.08. Holes are absolutely true to size and taper—the first time the shop had ever been able to hold dimensions with such consistency. It is anticipated that speeds and feeds can be substantially increased, which will effect further savings.

... A well-known equipment manufacturer is using a 1¾-inch Kennametal encased bar to bore cast steel at 350 feet per minute, .020-inch feed and approximately ½-inch depth of cut. The bar is used at full overhang—about 12 inches—and no chatter or bar deflection is experienced.

Kennametal Encased Kendex Boring Bars are available in a range of sizes. For information, write: KENNAMETAL INC., Latrobe, Pa.

C-3083

DOUBLE-END TYPE



INDUSTRY AND
KENNAMETAL
... Partners in Progress





In emergencies you want service . . . and fast!

You don't care *how* it's done . . . as long as you get the part you need *when* you need it. Yet, the fact that Clark has opened a new Central Parts Division in Chicago with over 4,500,000 stock parts under one roof *is* important to you.

For now, if your local Clark dealer cannot supply a specific part, his request to the Parts Division is processed immediately through a punch-card system, completing the order fast and efficiently. Thus, in an emergency, the part can be

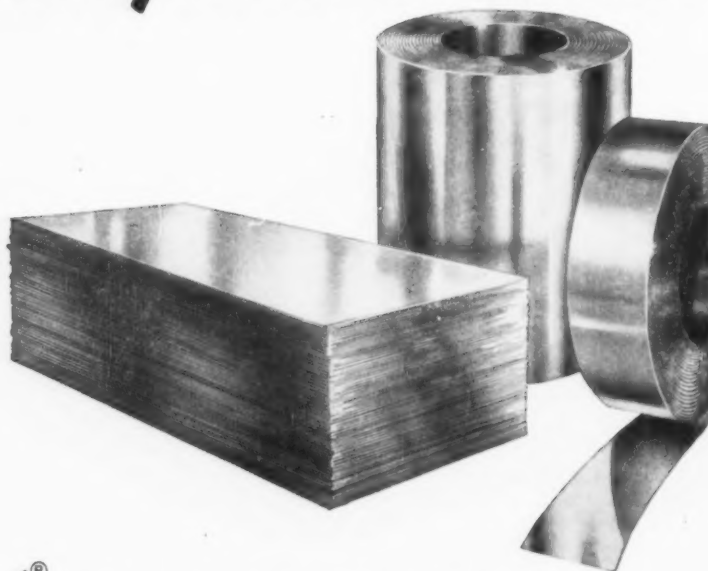
air-shipped to your dealer within 24-hours. This is Clark's assurance to you that you will have your trucks back on the job as quickly as possible.

Illustrated literature describing both the direct benefits and the methods of operation of this Division is available on request. For your copy, write to: Central Parts, Clark Equipment Co., Battle Creek, Michigan.

CLARK®
EQUIPMENT



Wherever you are
you get
quick personal service



when you order

MicroRold[®] Stainless Steel Sheet & Strip

SPECIFICATIONS

	WIDTH	THICKNESS
SHEETS	up to 36" up to 48"	.005 to .109 .010 to .109
STRIP	up to 23 ¹⁵ / ₁₆ "	.0015 to .090
GRADES:	201, 202, 301, 302, 304, 305, 316, 321, 347, 403, 410, 430 and Micro-Mach (special extra- high-tensile aircraft grade)	

Any one of the 305 independent steel warehouse distributors stocking MicroRold Stainless Steel is ready to serve as your *personal* stainless procurement representative. Located strategically in the U. S. A., Canada and Europe, your MicroRold distributor carries a variety of grades, widths, thicknesses and finishes and is fully qualified to assist you in the selection and fabrication of the most suitable stainless grade for your particular requirements.

Your MicroRold stainless steel distributor assures you of the fastest possible deliveries with an absolute minimum of red tape in order processing. If he is unable to fulfill your needs from stock he has available direct and immediate service from our mill. In cases of emergency, it is possible for us to roll and ship MicroRold Stainless Steel the same day the order is received.

You can rely on MicroRold service as a dependable source of supply, either mill or distributor delivery.

Write, wire or phone today for the name of your
nearest MicroRold Stainless Steel Distributor.



WASHINGTON STEEL CORPORATION

I-L WOODLAND AVENUE

WASHINGTON, PENNSYLVANIA

ANNOUNCING!

VICKERS New 1/4" Temperature and Pressure Compensated

FLOW CONTROL VALVE



FOR OPERATING PRESSURES
UP TO 2000 psi



TEMPERATURE COMPENSATED

Constant feed rates all day long with same throttle setting because throttle automatically compensates for changes in oil temperature. The compensator mechanism is simple in design and durable.



PRESSURE COMPENSATED

Constant feed rate throughout entire cycle because built-in pressure hydrostat automatically compensates for load changes.



SINGLE THROTTLE COMPLETE RANGE ADJUSTMENT

Greater flexibility because valve is adjustable within entire flow range of 5 to 1000 cubic inches per minute.

Check

THESE EXCLUSIVE
FEATURES that mean

Optimum Tool Life and Better Work Finish:



REVERSE FREE FLOW AS STANDARD FEATURE

A standard feature which permits reverse free flow (up to 1400 cu. in. per min.) from outlet to inlet port by-passing control elements.



TAMPER-PROOF ADJUSTMENT

Retention of original feed rate is assured because a set screw prevents inadvertent throttle movement and a cover over the set screw can be locked in place.



INTERCHANGEABLE

This new valve replaces 12 previous models and it is interchangeable with all of them, also the drain connection is eliminated on the new valve to simplify piping.



GREATER ECONOMY

No need to stock several valves for wide range of flow rates. Drain connection is eliminated, piping costs are reduced.



MAXIMUM RELIABILITY AND ACCURACY

Design of temperature and pressure control components assures maximum circuit reliability and extreme accuracy of feed through a range of 5 to 1000 cubic inches per minute.

FOR ADDITIONAL INFORMATION SEND FOR I-195040

7945

VICKERS INCORPORATED

DIVISION OF SPERRY RAND CORPORATION

Machinery Hydraulics Division

ADMINISTRATIVE and ENGINEERING CENTER

Department 1420 • Detroit 32, Michigan

Application Engineering Offices: ATLANTA • CHICAGO • CINCINNATI
CLEVELAND • DETROIT • GRAND RAPIDS • HOUSTON • LOS ANGELES
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PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon)
PORTLAND, ORE. • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA
(Berkeley) • SEATTLE • ST. LOUIS • TULSA • WORCESTER

FACTORIES ALSO IN AUSTRALIA, ENGLAND AND GERMANY
IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto and Montreal

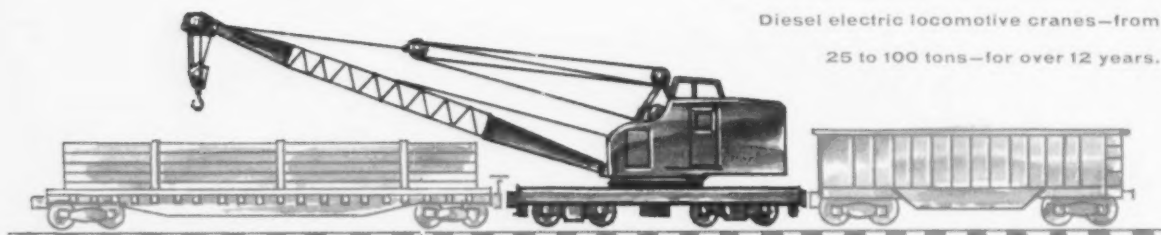
ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

THE IRON AGE, January 2, 1958

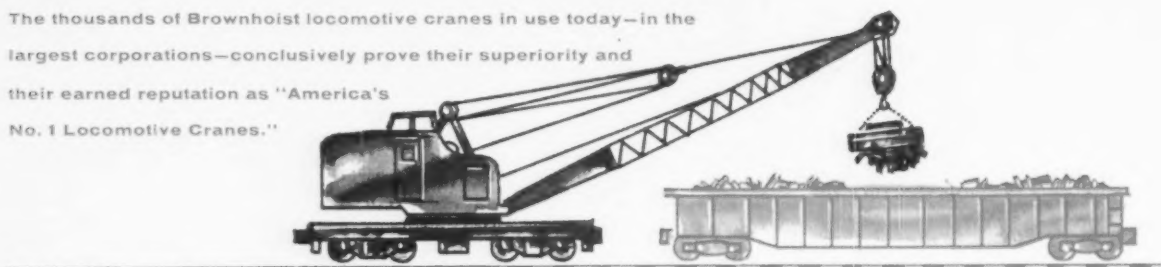
STAY ON THE RIGHT TRACK WITH BROWNHOIST DIESEL ELECTRIC LOCOMOTIVE CRANES

Industrial Brownhoist Corporation has been engineering
and building locomotive cranes since 1873—

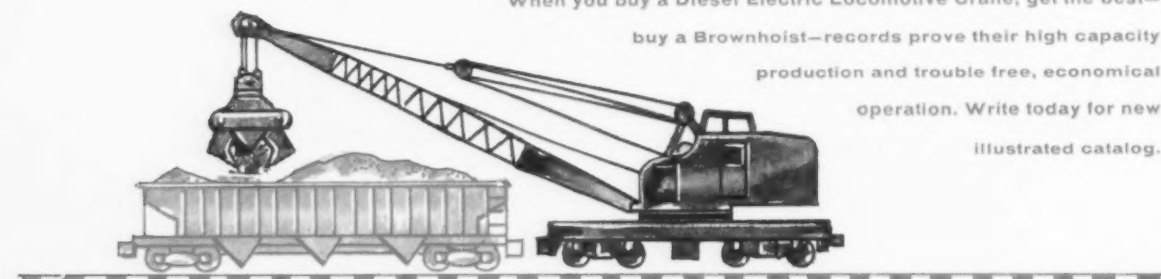
Diesel electric locomotive cranes—from
25 to 100 tons—for over 12 years.



The thousands of Brownhoist locomotive cranes in use today—in the
largest corporations—conclusively prove their superiority and
their earned reputation as "America's
No. 1 Locomotive Cranes."



When you buy a Diesel Electric Locomotive Crane, get the best—
buy a Brownhoist—records prove their high capacity
production and trouble free, economical
operation. Write today for new
illustrated catalog.



205

BROWNHOIST



CLAMSHELL BUCKET



250 TON WRECKING CRANE



COAL-ORE BRIDGE

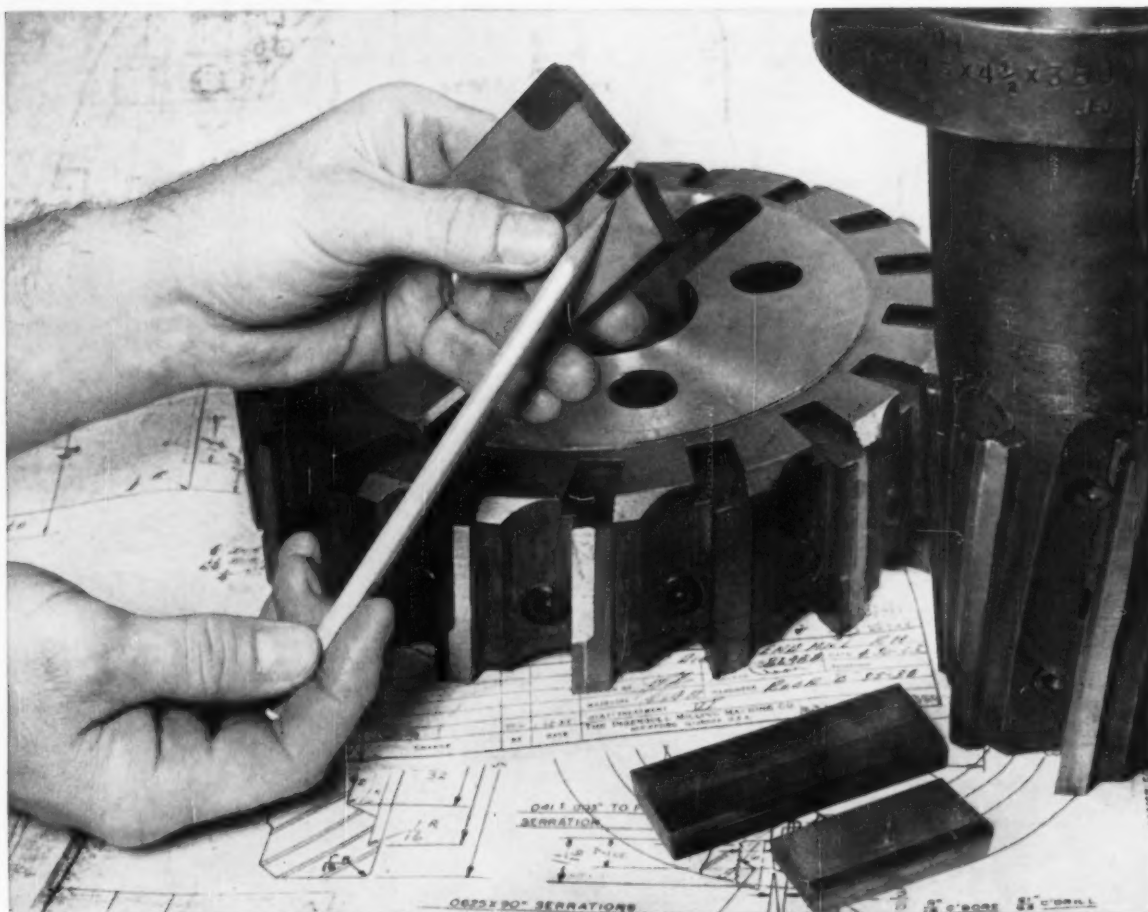


CAR DUMPER



LOCOMOTIVE CRANE

INDUSTRIAL BROWNHOIST CORPORATION, BAY CITY, MICHIGAN • DISTRICT
OFFICES: New York, Philadelphia, Cleveland,
Chicago, San Francisco, Montreal, Canada
• AGENCIES: Detroit, Birmingham, Houston



Ingersoll Type "NX" inserted blade Face Mills . . . for milling shoulders in steel or cast iron. Tips can be furnished any length to suit workpiece.

Worn Blades Are Only One Part Of Your Tool Costs

The initial price of the blades and the number of pieces produced between grinds, the design of the cutter and economical arrangement of the tip are all important considerations. Ingersoll's cutter service also includes a study of the machine, metal, speed, feed, rate of production and finish requirements. Only after considering all these can we recommend a cutter which will do your particular job best at the lowest cost.

We are used to working with these variables and offer you helpful counseling service as well as a proven line of cutters. Our job is to help you reduce your milling and boring costs, not just once but continuously.

We will welcome an opportunity to tell you more about this service. Write:



If you do not have a copy of this book, write us and we will send you one. It describes in detail the complete line of Ingersoll inserted blade milling and boring tools. Ask for Catalog #66N

CUTTER DIVISION

THE INGERSOLL MILLING MACHINE COMPANY

505 FULTON AVENUE

ROCKFORD, ILLINOIS



**Aiming
for surer
scrap
metal
profits?**

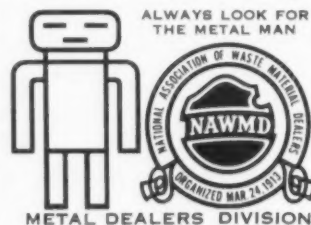
You can't miss with NAWMD counsel

As a scrap generating or consuming firm, you'll find yourself hauling in consistently higher profits after consulting your NAWMD dealer. As an NAWMD member, he is a leader in his industry. He is better equipped than anyone else to aid you in every phase of the profitable recovery of non-ferrous metal scrap.

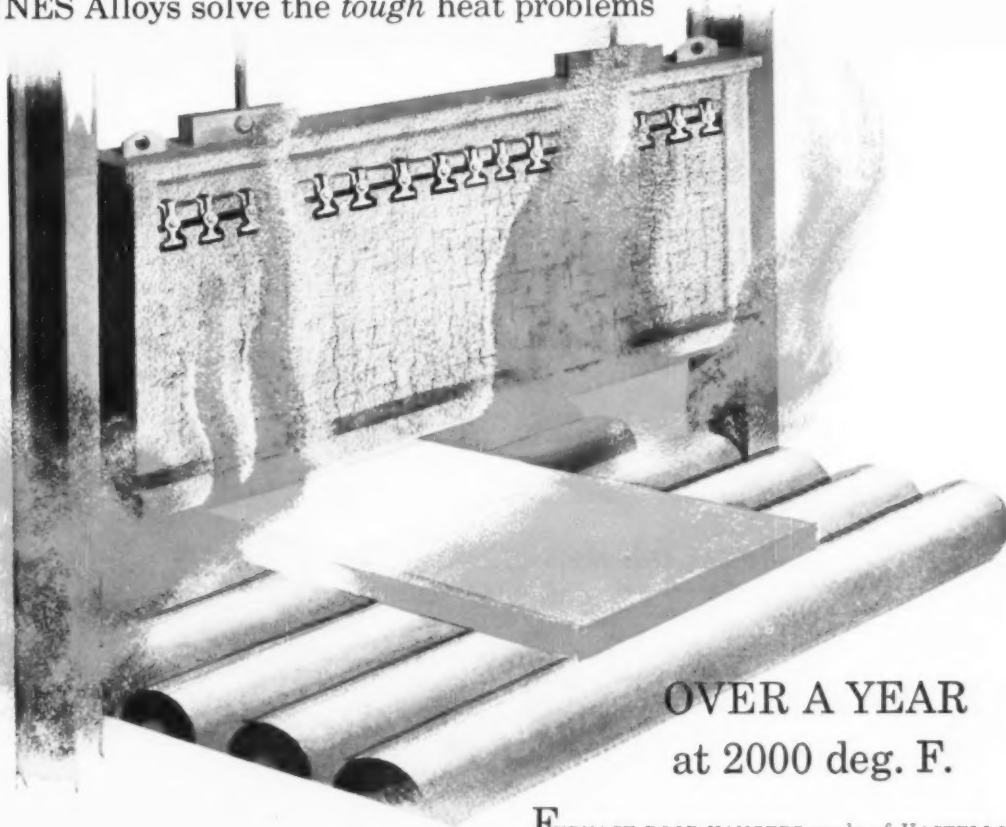
Added to his reliability and readiness to serve you, is the fact that NAWMD specifications are the accepted standard throughout the world. *For the best counsel on non-ferrous metal scrap problems, be sure to consult an NAWMD member dealer.*

**NATIONAL ASSOCIATION OF
WASTE MATERIAL DEALERS**

271 MADISON AVE., NEW YORK, N. Y.



HAYNES Alloys solve the *tough* heat problems



OVER A YEAR
at 2000 deg. F.

FURNACE DOOR HANGERS made of HASTELLOY alloy X are nearing completion of their second year of service, where ordinary hangers failed in three to four weeks. They support the interlocking firebrick of the doors and are exposed to the direct impingement from the 2150 deg. F. furnace flame and reducing or oxidizing atmospheres.

This is another example how HAYNES alloys serve the metalworking industries . . . by providing parts that are strong at high temperature. If you have a maintenance or production problem involving temperatures in the 1000 to 2100 deg. F. range, contact HAYNES STELLITE COMPANY, Division of Union Carbide Corporation, General Offices and Works, Kokomo, Indiana. Sales Offices in Chicago, Cleveland, Detroit, Houston, Los Angeles, New York and San Francisco.



Hangers must maintain firm grip . . . to prevent fire-brick from crumbling. After 5 weeks of operation here's what happened to the hangers—the four on the left are made of HASTELLOY alloy X, the others are not.

HAYNES
ALLOYS

HAYNES STELLITE COMPANY

Division of Union Carbide Corporation
Kokomo, Indiana



"Haynes," "Hastelloy" and "Union Carbide" are registered trade-marks of Union Carbide Corporation.

**These Jobs
are done
more efficiently**

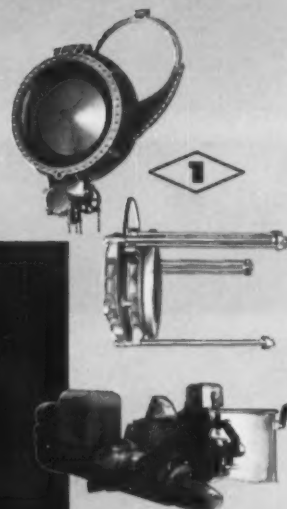
WITH

Bailey

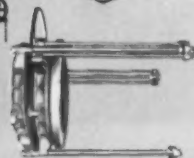
EQUIPMENT

- 1** **For Controlling Gas Mains . . .** Bailey Goggle Valves in thermal expansion (36" to 120" diameters) and mechanical (6" to 72" diameters) types.
- 2** **For Plugging Tapping Holes . . .** Bailey Clay Guns provide plenty of power and clay capacity for maintaining long holes.
- 3** **For Blast Furnace Stoves . . .** Bailey services include design, construction and relining — using Kennedy Checkers with cross-flue feature.
- 4** **For Cooling Blast Furnace Linings . . .** Bailey Cooling Plate Holder provides a gas- and water-tight seal, with ease of removal for inspection or replacement.
- 5** **For Pig Casting . . .** Bailey Pig Casting Machines provide trouble-free service while increasing casting capacity for foundries and blast furnaces.
- 6** **For Stopping Cinder Notches . . .** Bailey Cinder Notch Stoppers eliminate hazards to workmen at the cinder notch.
- 7** **For Sintering . . .** Bailey Pug Mills assure efficient pugging or mixing for blast furnace dust catchers and sintering plants. Feeder illustrated for Dust Catcher Mill maintains an even flow of the material to be processed.

Other Bailey Products: Blast Furnace Cold Blast Valve • Blast Furnace Blow-Off Valve • Check and Snort Valve • Mixing and Check Relief Valve • Fabricated Steel Stove Bottom • Precision Table Feeder • Ladle Skulling Hook



1



2



3



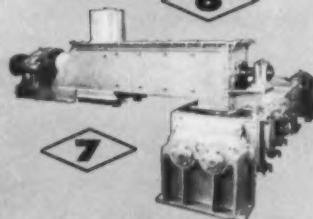
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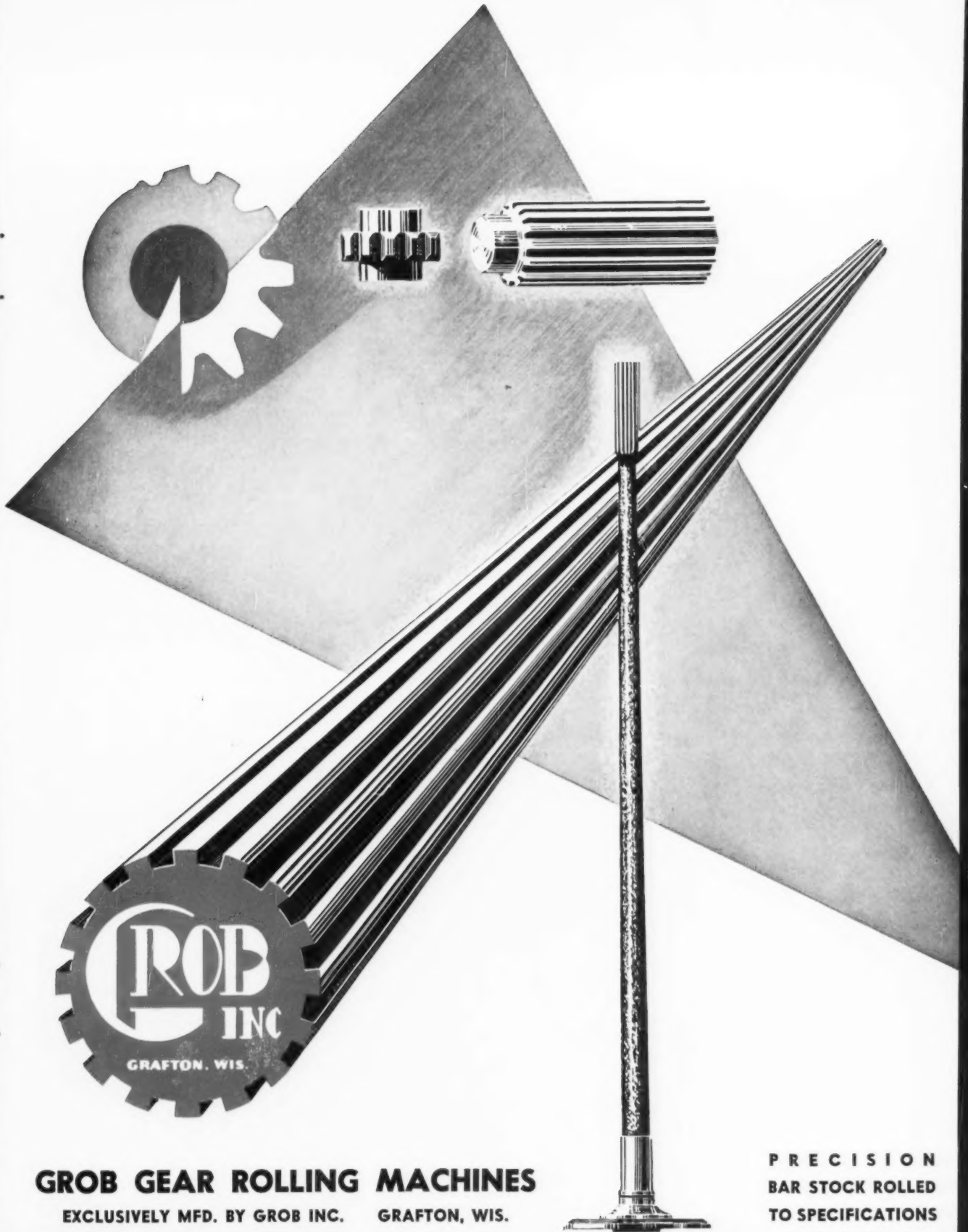


6



7





GROB GEAR ROLLING MACHINES

EXCLUSIVELY MFD. BY GROB INC. GRAFTON, WIS.

PRECISION
BAR STOCK ROLLED
TO SPECIFICATIONS



▲ **20 TON CRANES FLY AIRCRAFT SECTIONS IN CEILING**

Lowering the tail boom of a large airplane into place. These huge units must be handled with extreme care and inched gently into exact position for matching of holes. The Cleveland Tramrail cranes used here are of the transfer type and carry loads to 20 tons.

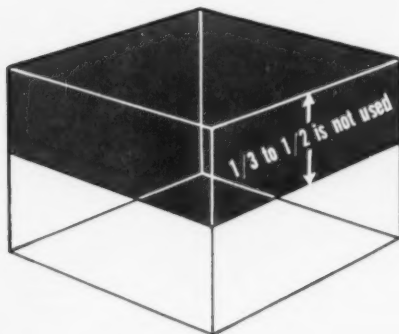
40-FOOT TUBES HANDLED FAST IN CEILING

5 ton Tramrail cab-operated transfer cranes move tubes at 300 f.p.m. to all points in this 58,000 sq. ft. room. To convey the tubes from bay to bay with floor trucks would be awkward, slow and require considerable valuable floor space. The two hoist hooks are 16 feet apart and have a lift of 30'-0". ▼



LOOK TO YOUR CEILING For Big Savings

1/3 to 1/2 the cubic space in the
average plant is NOT USED



MANY plants are pinched for floor space, yet are not using a large part of their cubic footage. Much of their large ceiling space is wasted.

By moving all equipment and activities possible from floor to ceiling, many square feet of floor are freed for the addition of production machinery without plant expansion for needed storage areas and other requirements.

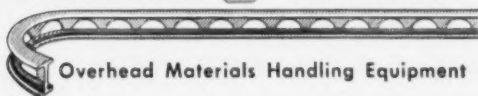
Aisleways can be reduced in size or completely eliminated. Machines can be moved closer together. Floor areas used for local stocking can often be done away with.

Materials handling is an operation that can be carried on efficiently overhead. Cleveland Tramrail equipment is handling vast tonnages of materials in the ceilings of thousands of factories and warehouses. Not only do Tramrail cranes and track systems save tremendous areas of floor space, but they speed handling, lower production costs, often by fantastic amounts, and greatly aid safety.

We welcome an opportunity for a Cleveland Tramrail materials-handling engineer to give you the details.

Write for free Engineering and Application Booklet
No. 2008. Packed with valuable information.

CLEVELAND TRAMRAIL

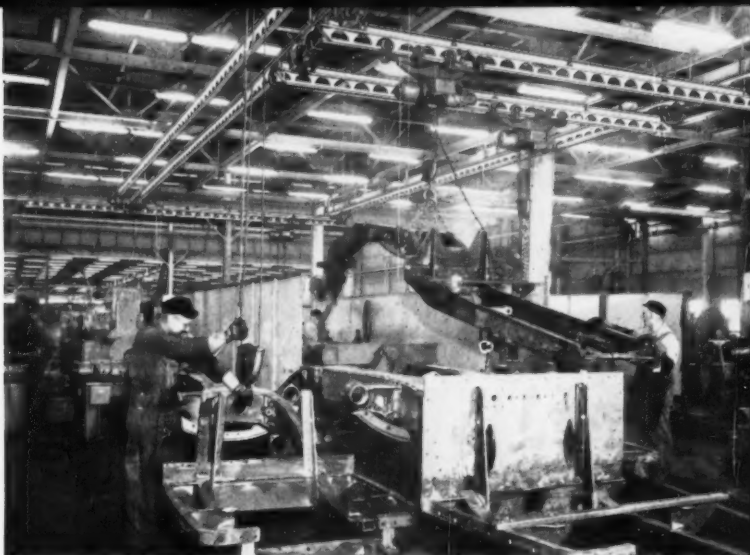


Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4832 E. 290 ST. • WICKLIFFE, OHIO

TRAMRAIL CRANES PERMIT LOWER HEIGHT OF CEILING

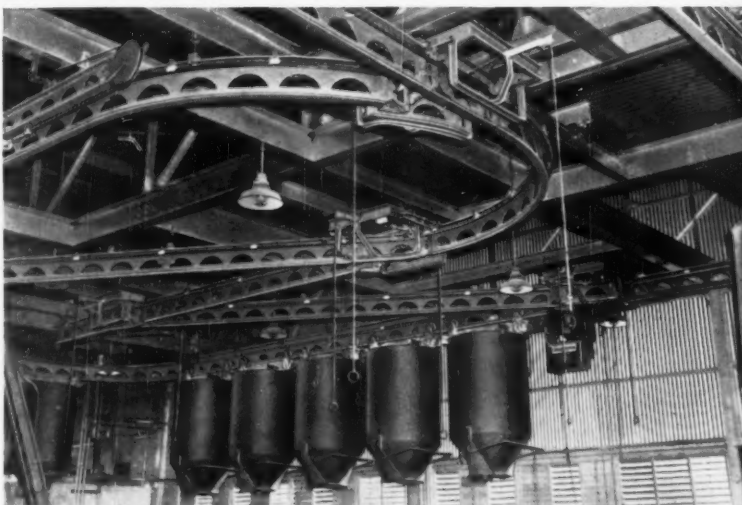
Both ordinary top-running and Tramrail under-running cranes were considered when this Diesel Repair Shop was planned. Two 5 ton, 63'-0" Cleveland Tramrail cranes were installed. Among other advantages, they enabled a lower building height. This shop is thought to be the finest and most modern of its kind.



TRACTOR PLANT PROFITS BY USING CEILING

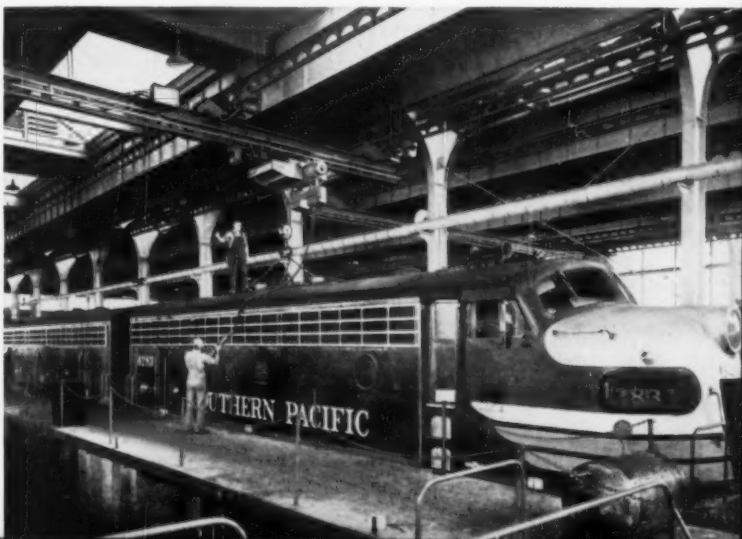
Heavy materials can be moved quickly, easily by one man in every square foot of a plant covered by Cleveland Tramrail cranes.

Some 250 cranes, like those illustrated, eliminate waste time waiting for a lift in this efficient plant.

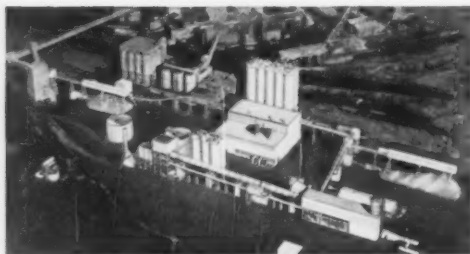
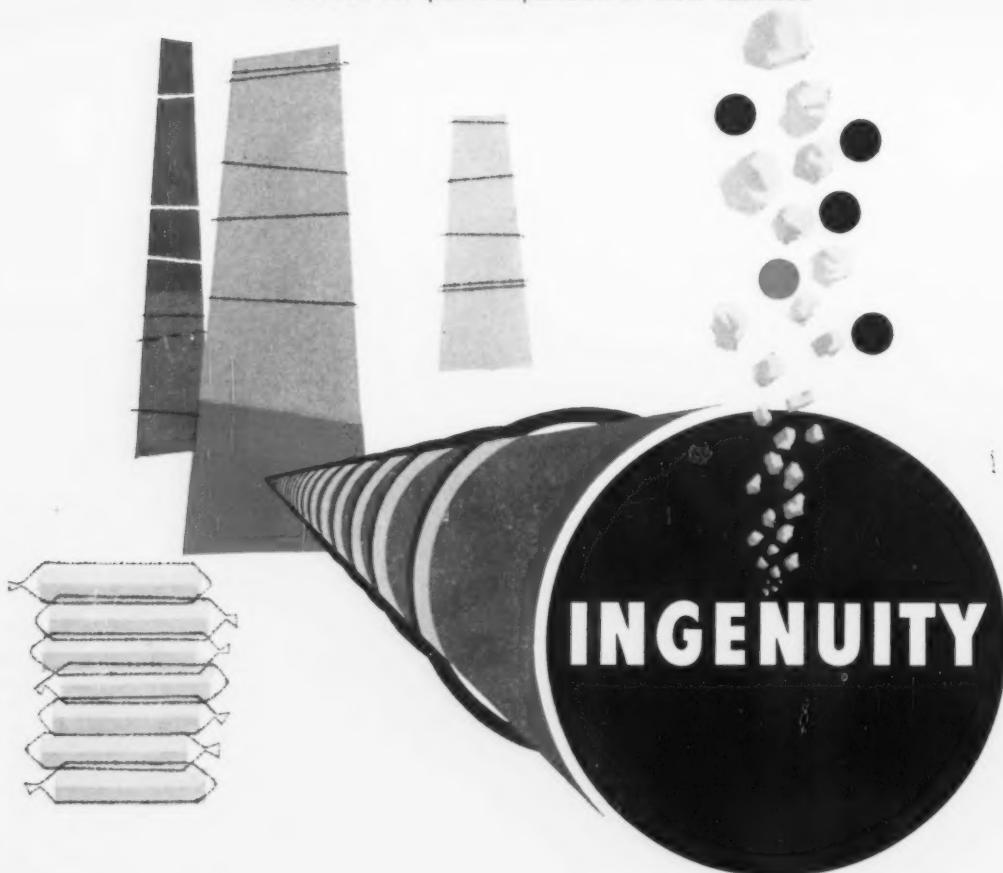


TRAINS OF BUCKETS CONVEYED IN CEILING

Buckets of materials can be conveyed on Tramrail track and switch system in ceiling by powerful tractor. Control can be automatic if desired. Each bucket in train illustrated has 45 cu. ft. volume and 4000 lb. capacity.



call KE for plant expansion or new facilities



1,250,000 barrel cement plant addition recently completed by KE for Marquette Cement, one of world's largest cement producers.

**has made KE a major engineer-contractor
serving the Minerals Industry**

Placing of four fully-lined mills in a few hours instead of days—a unique center pier kiln drive—a 2,700' cement transport "airway." With these and many more planned innovations and short-cuts, Kaiser Engineers completed Marquette Cement's Cape Girardeau plant expansion quickly and economically. Construction cost and time were well below industry average.

Mining, transportation, beneficiation, materials handling, processing in cement, gypsum, coal, ferrous and non-ferrous metals facilities—these are but a few of the fields wherein KE serves the Minerals Industries—from economic analysis through start-up.

KE ingenuity—multi-industry experience, keenly applied—can benefit your next facility. Let us show you how.



Division of Henry J. Kaiser Company • Oakland 12, California • New York, Pittsburgh, Washington, D.C., Buenos Aires, Calcutta, Dusseldorf, Montreal, Rio de Janeiro, Sydney, Tokyo



THEY SMASHED INTO THAT WEIRKOTE[®] TILL WE COULDN'T STAND IT!

When a half-ton steel wrecking ball smashes broadside on target—mister, that's a *test*.

Yet, when Weirkote zinc-coated steel is put through that, or equally brutal punishment, its zinc coating stays skin-tight throughout the ordeal.

Think of that demonstration in terms of *your* products, production steps and cost problems.

Weirkote's continuous-process zinc coating *thrives* on toughest fabrica-

tion steps—spinning, deep drawing, roll forming, extrusion. And there's no flaking or peeling.

With Weirkote, you can eliminate the cost of plating, painting or redipping after fabrication. In many instances, you'll get prolonged die life, too, due to the lubricating quality of Weirkote's zinc coating.

Free Weirkote Booklet

Send for the new booklet on Weirkote today. Write Weirton Steel Company, Dept. A-6, Weirton, West Virginia.



**WEIRTON STEEL
COMPANY**

WEIRTON, WEST VIRGINIA

a division of

NATIONAL STEEL CORPORATION

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There are extra values in ARMSTRONG TOOLS that become apparent only with use.

TOOL SENSE—convenience in use—the most efficient "*tool approach*" built into ARMSTRONG Tool Holders; the balance and "*feel*" of an ARMSTRONG Wrench; the *rigidity* of ARMSTRONG "C" Clamps; the extra *toughness* of ARMSTRONG Lathe Dogs and Eye Bolts; the universal *adaptability* of ARMSTRONG Set-up and Hold-down Tools—the evidence of "*tool sense*", the understanding of each tool's requirements.

STRENGTH—built into each individual ARMSTRONG TOOL is a safety factor of extra *strength*—*strength* beyond any need, the inherent strength of specially selected materials enhanced by proper heat treatment and hardening.

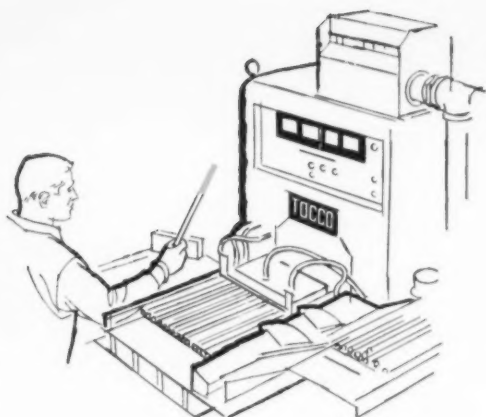
UNIFORM QUALITY—the uniform quality made possible by modern manufacturing methods, in a specially-built plant equipped with every needed quality control. The name ARMSTRONG with the Arm-and-Hammer Trade Mark is universally recognized as a guarantee of finest quality.

ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"

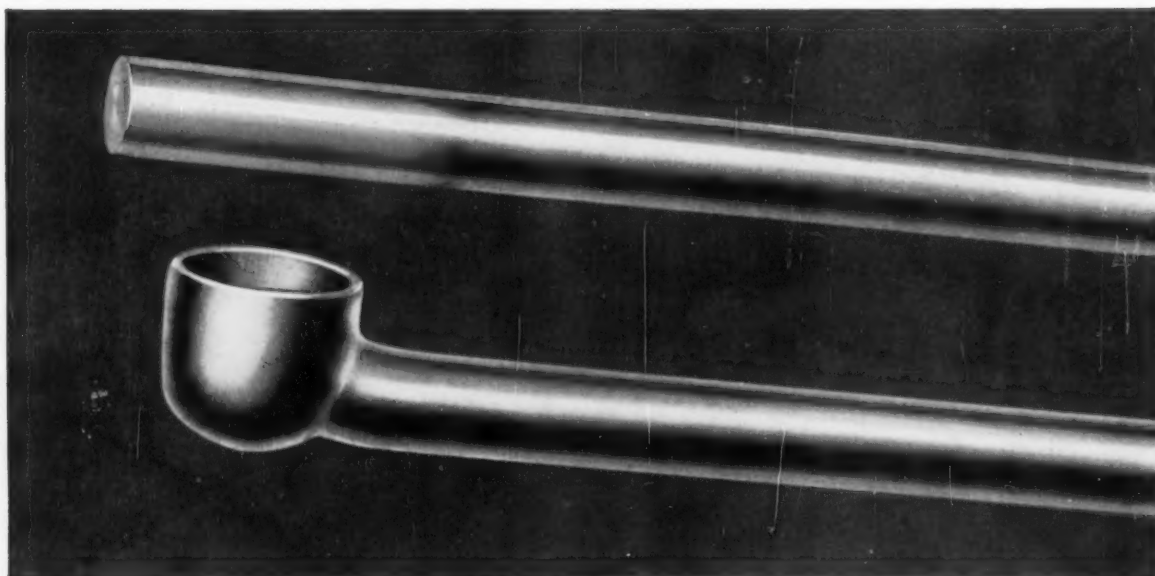
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Heating Costs *Cut In Half*

with TOCCO Induction Heating*



Engineers at Thompson Products Inc.'s Michigan Division recently changed from gas-fired furnaces to fully automatic TOCCO. Application: heating for forging of automotive tie rods. Result: a substantial reduction in direct labor costs, saving thousands of dollars a year on this heating for forging operation. *Annual savings actually amortize the cost of the TOCCO installation in about one year.*

The automotive tie rod shown here is only one of over 500 parts heated for forging in Thompson's new, modern forge plant. *Every one of these parts is heated with TOCCO equipment.*

If your manufacturing operations require heating for forging, heat treating, brazing, soldering or melting, it will pay you to investigate TOCCO as a sound method of increasing production and lowering costs.



THE OHIO CRANKSHAFT COMPANY

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The Ohio Crankshaft Co. • Dept. A-1, Cleveland 5, Ohio

Please send copy of "Typical Results of TOCCO Induction Heating for Forging and Forming".

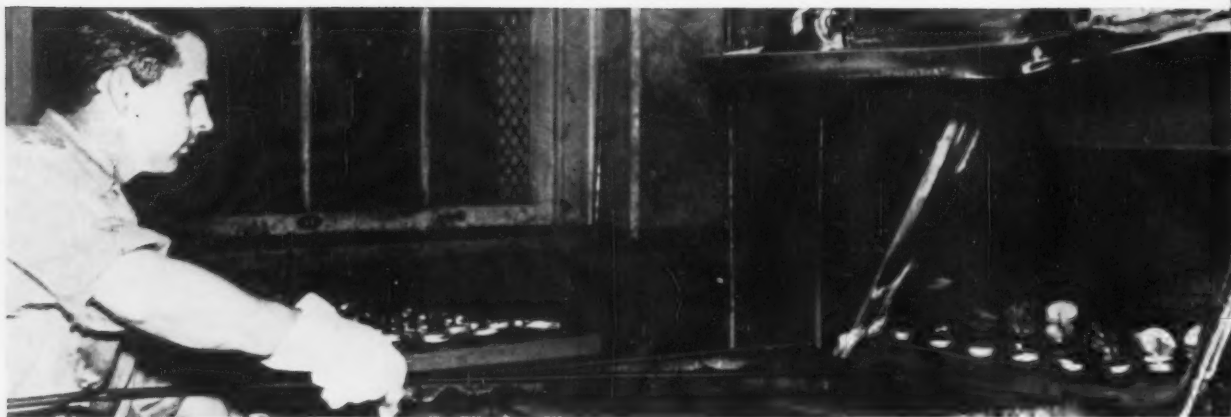
Name

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Company

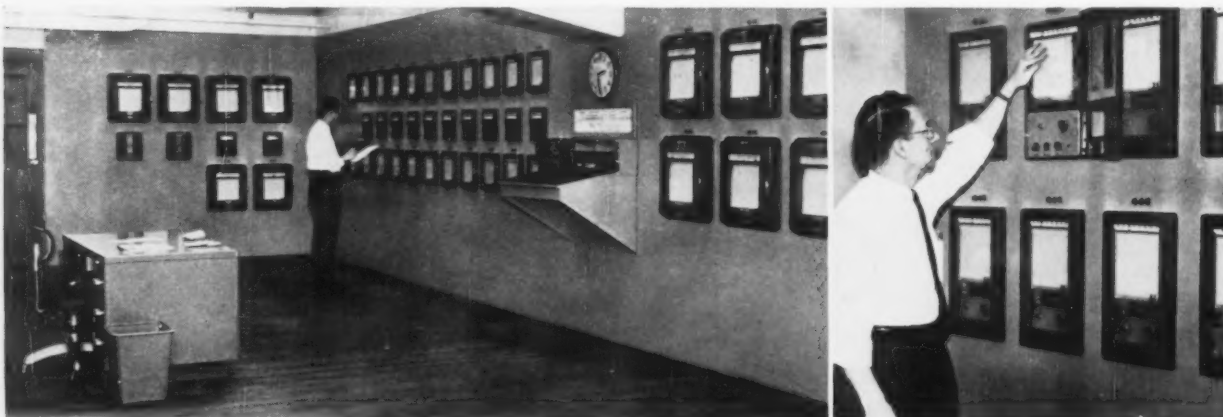
Address

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At The National Cash Register Company, furnace man inserts work in continuous carburizer—

How The National Cash Register Co.



Nerve center of heat treat operations is instrument control room where operator schedules incoming work . . . posts job

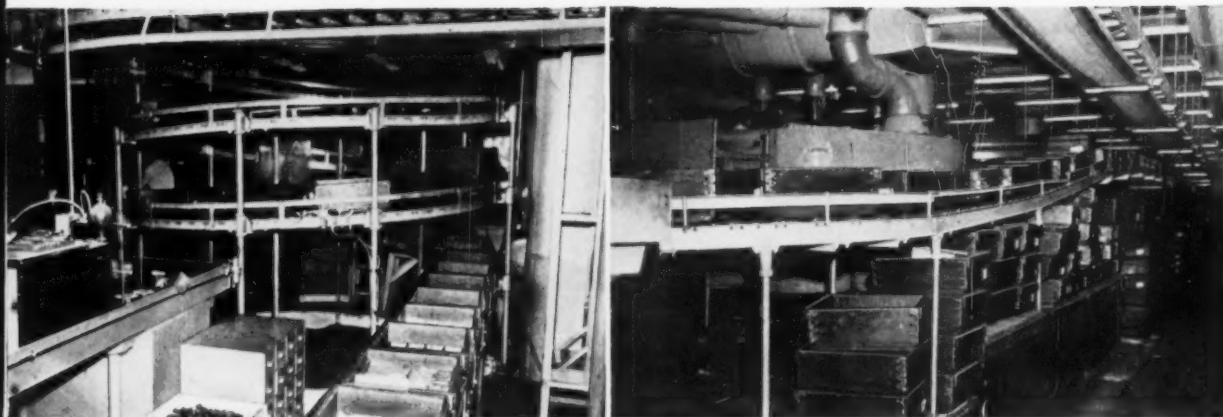
centralized L&N controllers form

Meeting this high production schedule at The National Cash Register Company—the world's largest manufacturer of cash registers and a leading producer of accounting and adding machines—is due to the right combination of material handling, scheduling and the unique *temperature control center for the heat treat department*.

With temperature the most critical factor in any heat treating operation, The National Cash Register Company depends for the most part on L&N controllers for effective temperature control. In line with the Company's continuing program to maintain product quality and heat treating efficiency, all instruments are centralized in a con-

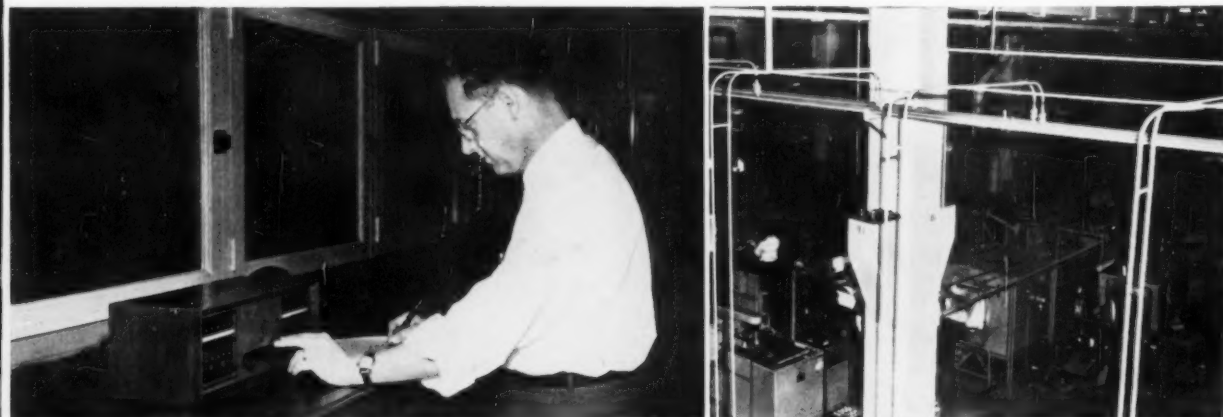
trol room overlooking the heat treat floor. Here an operator receives incoming work . . . schedules it for heat treat . . . sets the control point setter on the temperature controlling instrument . . . and posts on the instrument record itself the job number, time in the furnace and time due out.

To meet the requirements of their heat treat program, they've already installed 38 Speedo-max® H On-Off and 2-Action Duration-Adjusting Type controllers to supplement older L&N instruments which they were using and which are still giving excellent service. These controllers are holding furnace temperatures well within the ± 10 F specified . . . permit reproducible results day after day.



one of various operations performed on parts which move in and out of heat treat department on mechanized conveyors.

heat treats 900,000,000 parts a year...



and schedule on record... and advises furnace man when heat treat is finished. Control room overlooks heat treat floor.

nerve center of heat treat department

Heat treating operations include carburizing, hardening, tempering, annealing, sintering, brazing, etc. Furnaces are electric... both batch and continuous... and include gas carburizers, cyanide pots, salt pots, lead pots, bell annealers, draw furnaces, induction heaters, sintering furnaces, etc. Parts are made of various steels—from low carbon strip to various alloys—and in order to give the wear and service expected of a quality product, each part must—and does—meet *precise heat treating specifications*.

To keep production moving, both instruments and furnaces are routinely checked and serviced. A system of signal lights permits locating any

trouble between the furnace and control room in a matter of minutes.

If you're installing new equipment or modernizing your present heat treat facilities, take advantage of L&N experience in providing control systems for thousands of heat treating applications. For more information, contact your nearest L&N office or write us at 4956 Stenton Avenue, Philadelphia 44, Pennsylvania.

LEEDS  **NORTHROP**
instruments automatic controls • furnaces

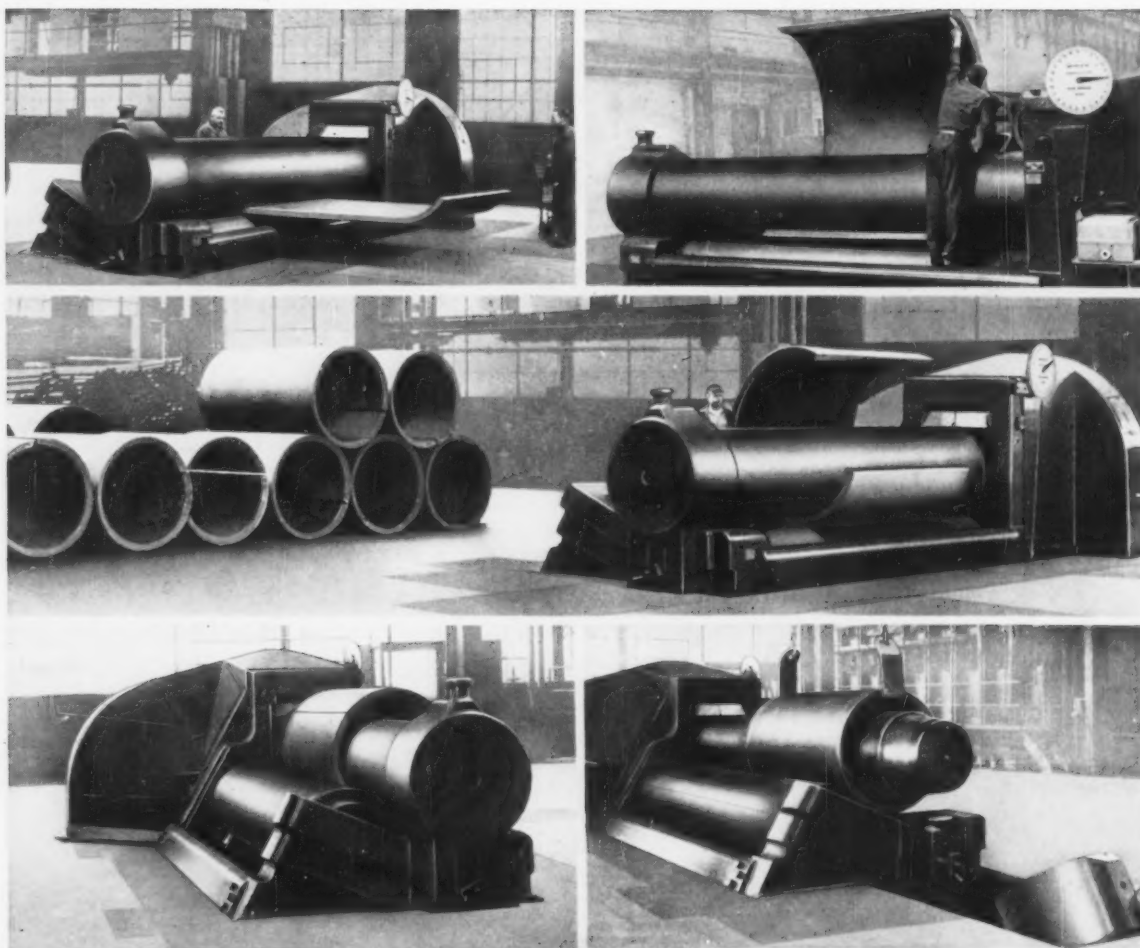


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**Rolling A-212 Plates Cold
3" Thick to 38" I.D.**

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CONVEYORS**
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& TOOL**
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and Scythes

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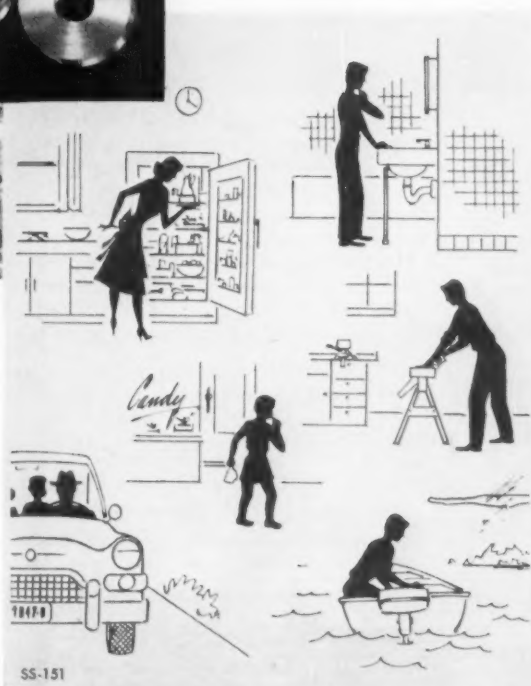




Photo courtesy of Jones & Laughlin Steel Corporation

BAKER'S MAGDOLITE AND JEBCOLITE are always 5 ways better

Continued research and development throughout the years, plus The J. E. Baker Company's precisely controlled manufacturing methods, have resulted in the superior, properly burned, grain-sized Magdolite and Jebcolite particles which help provide:

More uniform ingots—increased ingot production—increased furnace efficiency—lower

refractory costs—less defective production material.

Magdolite and Jebcolite* are the *original* dead-burned dolomites that offer better composition, preparation, strength, economy and quality. Don't say "dolomite." Save dollars. Specify Baker's Magdolite for open hearth and Jebcolite for electric furnace use.

**Jebcolite has the same superior chemical, physical and mineralogical characteristics as Magdolite and differs only in grain size which is designed specifically for electric furnace application.*



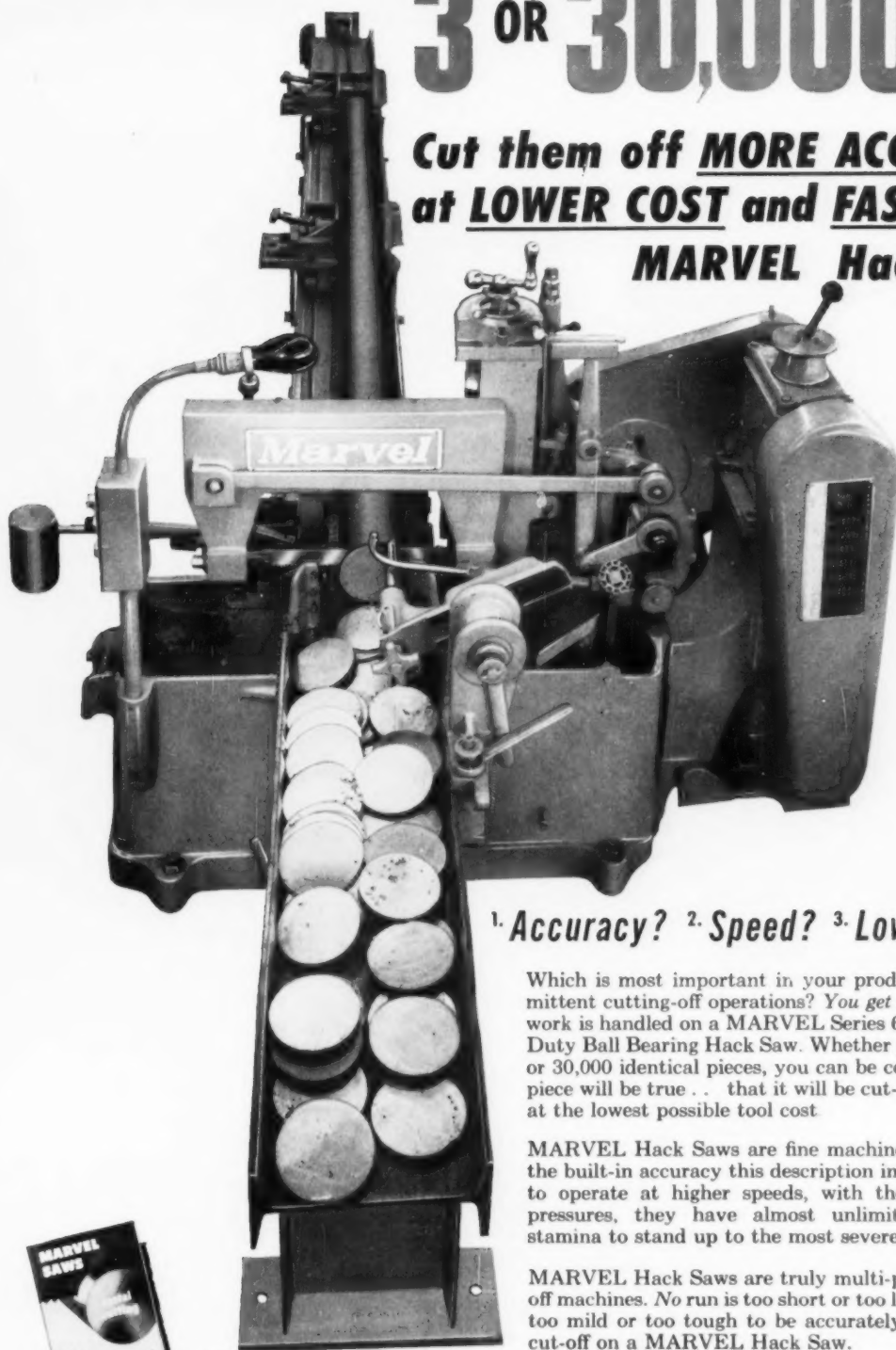
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YORK, PENNSYLVANIA

PLANTS: BILLMEYER, YORK, PENNSYLVANIA — MILLERSVILLE, OHIO

3 OR 30,000 PIECES

**Cut them off MORE ACCURATELY
at LOWER COST and FASTER on a
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Which is most important in your production or intermittent cutting-off operations? *You get all 3* when your work is handled on a MARVEL Series 6A or 9A Heavy Duty Ball Bearing Hack Saw. Whether you're cutting 3 or 30,000 identical pieces, you can be certain that each piece will be true . . . that it will be cut-off quickly, and at the lowest possible tool cost.

MARVEL Hack Saws are fine machine tools, with all the built-in accuracy this description implies. Designed to operate at higher speeds, with the heaviest feed pressures, they have almost unlimited power and stamina to stand up to the most severe service.

MARVEL Hack Saws are truly multi-purpose cutting-off machines. *No* run is too short or too long, *no* material too mild or too tough to be accurately and efficiently cut-off on a MARVEL Hack Saw.



Catalog C56 has complete details, facts and figures on MARVEL Metal Cutting Saws.

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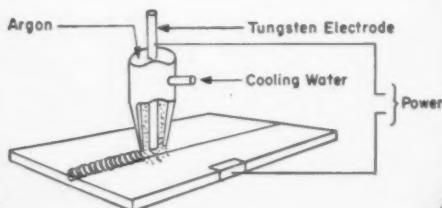


S-1308

For any of your welding jobs

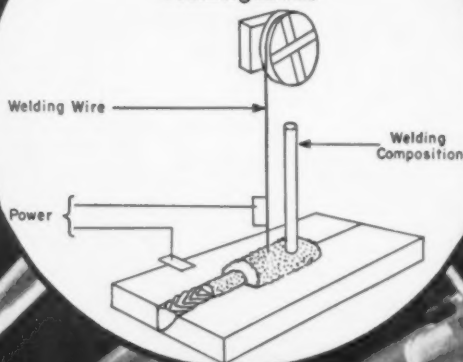
HELIARC

Inert Gas Shielded Arc



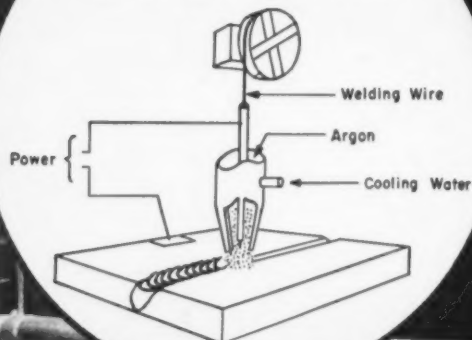
UNIONMELT

Submerged Arc



Sigma

Shielded Inert Gas Metal Arc



FOR THE BEST IN ELECTRIC WELDING... LOOK TO LINDE

... LINDE can supply the *right method!*

Inert gas shielded arc welding—

HELIARC Apparatus for inert gas shielded arc welding, using a tungsten electrode and a shield of LINDE argon, is tops for joining hard-to-weld commercial metals. On stainless steel and aluminum, HELIARC Welding is fast and clean, producing high-quality welds that resist corrosion. HELIARC Welding eliminates costly grinding and finishing, making it a valuable method for quantity production of hard-to-weld metals.

Submerged arc welding—

Shapes made of materials ranging from light gage to heavy plate, adaptable to mechanization, can be most economically joined by UNIONMELT Welding. It is used on low and medium carbon steels and alloy steels, including those containing chrome and/or nickel. UNIONMELT Welding is also used extensively for resurfacing metal, providing extra wear and corrosion resistance. UNIONMELT Welding is fast and inexpensive on production jobs.

Shielded inert gas metal arc welding—

One of the most versatile welding methods is Sigma Welding. LINDE's Sigma apparatus, using a shield of LINDE argon, is ideal for manual welding of commercial metals $\frac{1}{8}$ in. or more thick, and for automatic operation on lighter gage metals to .050 in. Highest quality welds can be made on aluminum thicker than $\frac{1}{8}$ in. at speeds up to 16 inches per minute. Build-up and surfacing jobs are also improved by using LINDE's Sigma welding method.

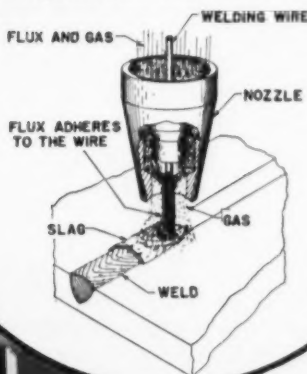
New! **Magnetic flux gas shielded arc welding—**

UNIONARC Welding, LINDE's most recent development in electric welding, is an extremely fast method for welding mild steel. This method employs a continuously-fed, bare steel wire electrode, magnetically coated with flux conveyed in a stream of carbon dioxide shielding gas. Manual welds can be made easily in any position—vertical, overhead, downhand—with no stops to change electrodes. The speed, versatility, and ease of operation of UNIONARC Welding brings costs down 25% to 65% below those of manual covered electrode welding. Clean, smooth, high-quality welds are provided, even in the presence of moderate amounts of rust, scale, and moisture.

Engineers at LINDE have been designing, developing, and testing electric welding methods and apparatus for many years. Help on any welding method is yours for the asking. You can improve your work and cut production problems by taking advantage of LINDE's experience. For data on UNIONARC Welding or any other electric welding method, call the LINDE office nearest you.

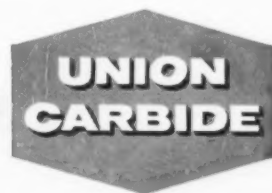
LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y. Offices in other principal cities. In Canada: Linde Company, Division of Union Carbide Canada Limited.

UNIONARC Magnetic Flux Gas Shielded Arc



The terms "LINDE," "HELIARC," "UNIONMELT," "UNIONARC," and "UNION CARBIDE" are trade marks of Union Carbide Corporation.

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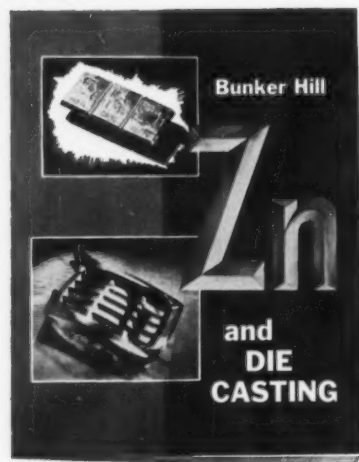
*as a high-speed,
low-cost production tool*

ZINC

*and its advantages as a base metal
for die castings*

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*contribution to the phenomenal growth
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says
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"The net result of a 4-year association with U. S. Steel Supply has meant a *proven* 50% increase in our total production," says Mr. James H. Dray, President of the Dray Manufacturing Company, Inc., Downey, California, manufacturer of metal office furniture.

By using U. S. Steel Supply's ANY STEEL, ANYWHERE, ANY TIME SERVICE, Mr. Dray eliminated the need for a voluminous inventory. "We previously carried a \$60,000 in-plant stock of cold-rolled steel sheets," he says. "Today, we have less than \$16,000 worth on hand, because we have our steel delivered, if necessary, on a day-to-day basis from U. S. Steel Supply—and the increase in available working capital, which had been tied-up in inventory, permitted us to buy additional production equipment *we could not afford before*."

"Secondly," says Mr. Dray, "our reduced inventory also made an extra 10,000 square feet of space available for increased production facilities and machinery." Steel buyers, like James H. Dray, have found that by using ANY STEEL, ANYWHERE, ANY TIME SERVICE it is actually *less expensive* to buy from U. S. Steel Supply.

Why not put this service to work for you?

Your steel needs, regardless of your location, can be handled immediately and accurately by U. S. Steel Supply's ANY STEEL, ANYWHERE, ANY TIME SERVICE. You'll get money-saving, time-saving and problem-solving benefits when you deal with U. S. Steel Supply, *plus* the invaluable experience of our metallurgists, our engineers

and our sales representatives.

If you want one of our representatives to help you plan for new efficiency, new economy and new profitability in your future steel buying needs, just write to U. S. Steel Supply at the address listed below.

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DIVISION

Mailing Address:

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General Offices:

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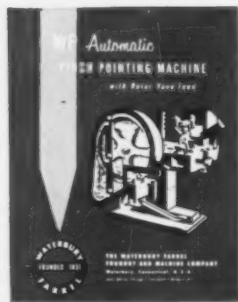
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UNITED STATES STEEL

☐ "Waterbury" Automatic Nut Formers

Cir. No. 930-A-2

Describes operation and illustrates design details of machine which can cold forge a wide variety of standard and special nut blanks as well as similar parts. Production rates range from 60 to 125 per minute depending upon size of machine. Gives specifications for 5 sizes ranging from $\frac{1}{4}$ " to $\frac{3}{4}$ " nominal bolt capacity. 8 pages.



☐ Automatic Pinch Pointing Machine

Cir. No. 742-A-2

Describes and illustrates rotor vane feed pinch pointer with maximum production capacity of 150 per minute. Max. blank diameter $\frac{1}{4}$ ". Max. length under head $2\frac{1}{2}$ ". Min. length under head $\frac{1}{4}$ ". Shows typical work samples and gives table of specifications.

☐ "Waterbury" Progressive Headers

Bul. No. 104-A-2

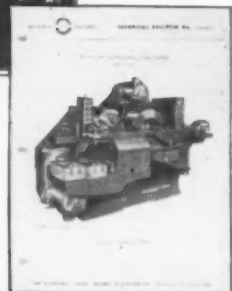
Covers features of multiple die cold heading machine which has roll feed, cut-off, transfer mechanism and four operating stations. Points out that machine can produce wide variety of headed work including hexagon head cap screw blanks and socket head cap screw blanks. Four sizes of headers are covered in the specification tables. 8 pages.



☐ High Speed Threader

Cir. No. 942-A

Describes and illustrates completely new type of thread rolling machine which uses planetary dies to thread up to 2,000 blanks per minute.



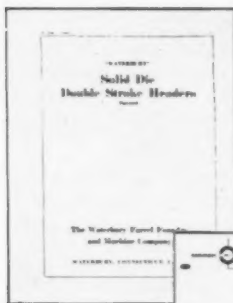
☐ High Speed Screw Slotter

Bul. No. 106-A-3

Describes and illustrates WF's revolutionary new slotter-production team-mate of the new threader. Uses single feed mechanism and single saw to slot up to 2,000 burr-free blanks per minute.

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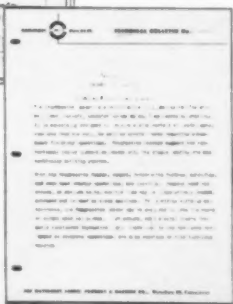
Send For Your FREE Copy Of These NEW Bulletins



☐ "Waterbury" Solid Die, Double Stroke Headers

Cir. No. 933-A-2

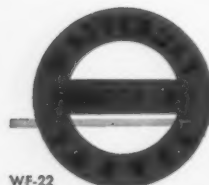
Explains construction and operating features of crank type, two blow headers for producing the standard varieties of bolt and screw blanks as well as many special cold-forged products. Gives specifications for five sizes of long stroke and five sizes of short stroke machines handling wire diameters from $\frac{3}{16}$ " to $\frac{1}{2}$ ". 8 pages.



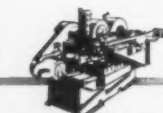
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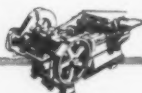
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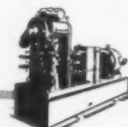
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TANDEM ROD MILLS—

Cir. No. 729-R

8-pager on mills for high speed reduction of non-ferrous and ferrous rod. Shows various sizes of mills plus work samples and a cross-sectional reduction sequence. Tells how mill can reduce operating costs. Also discusses pay off unit, straighteners, coilers and cooling method. Table gives capacities and other data.



MULTIPLE PLUNGER PILLAR PRESSES—

Cir. No. 754-N-2

8-page illustrated booklet presents latest features in WF multiple station pillar presses. Gives specifications and capacities for six sizes. Shows typical work samples and also covers accessory equipment.



2-HI ROLLING MILLS—

Bul. No. 111-R

Gives general information on wide variety of 2-Hi mills for cold or hot rolling. Rolls range from 5" dia. to 24" dia. Pictures five different sizes.



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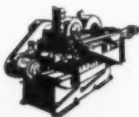
Describes and illustrates automatic inclined shell threader for attachment to eyelet machine or with independent feed. Covers use, construction, operation and drive. Shows work samples and has table of specifications.



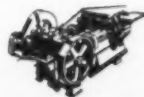
WIRE FLATTENING MILLS—

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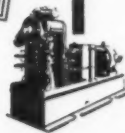
Gives information on mills with production speeds approaching 3,000 FPM. Shows various sizes. Rolls range from 4" dia. to 12" dia. Includes data on edgers, pay-offs, winders, drives, coolant system, etc.



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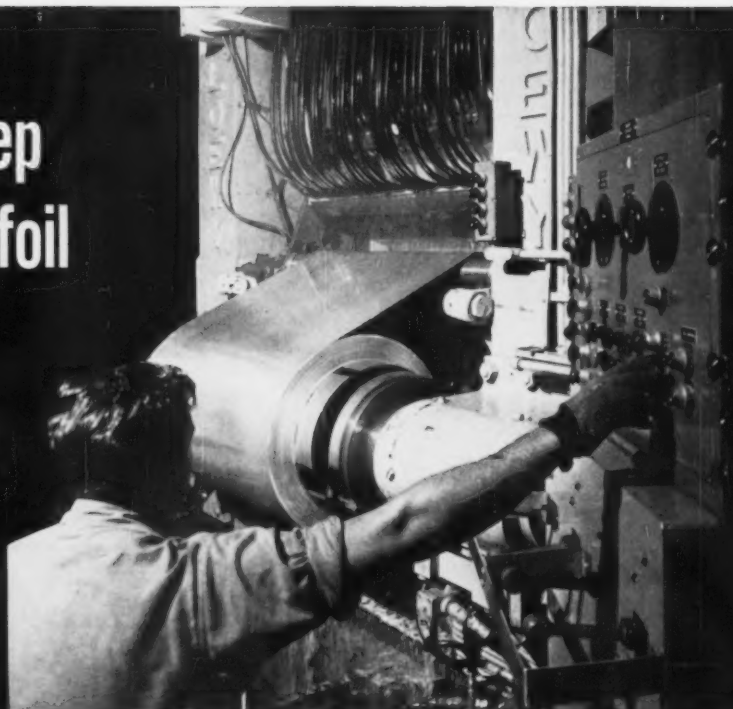
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how to keep aluminum foil from shattering

*... at 35 miles
per hour!*



Kaiser Aluminum & Chemical Corp. increased annual production of aluminum foil 50% at its Permanente, California plant through installation of a four-high foil mill. This mill reduces aluminum strip in thickness from .026 to .00025 of an inch at speeds up to 3000 fpm.

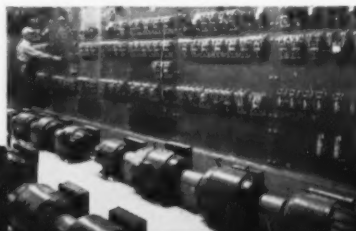
At 35 miles per hour, excessive strain at any of the several reduction stages would shatter the extremely thin foil. From the original payoff reel through to the final rewind, uniform tension is provided by Reliance V*S Drives.

Reliance engineers built this drive specifically for this mill, to provide the constant uniform tension which is so important.

This application is typical of the many diversified jobs that Reliance V*S Drives are called upon to perform. There is a Reliance V*S Drive to fit your application.

D-1662

For further details, write Dept. 21A



Main control room—Where Reliance equipment provides more than 2,900 hp. to drive this mill.



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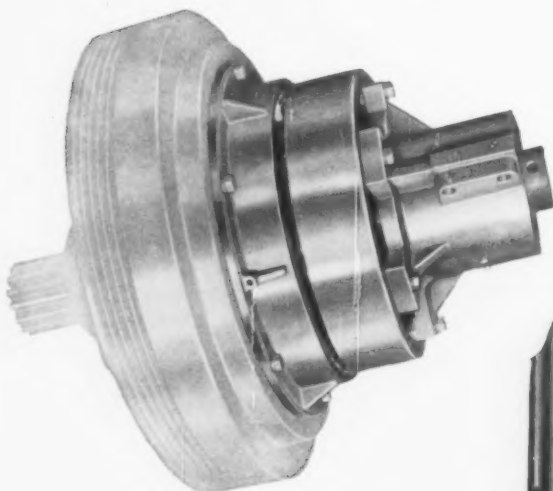
Get in touch with your Steel Service Center representative. Discuss with him the many ways in which he can help you maintain maximum *production efficiency* in your plant just as Bailey Meter did. Your "Cost of Possession" for steel may also be materially reduced. American Steel Warehouse Association, Inc., 540 Terminal Tower, Cleveland 13, Ohio.



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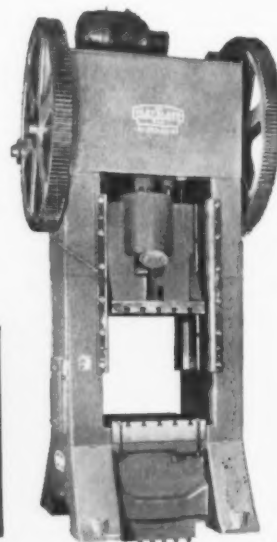
with patented Cleveland Drum Type Friction Clutch



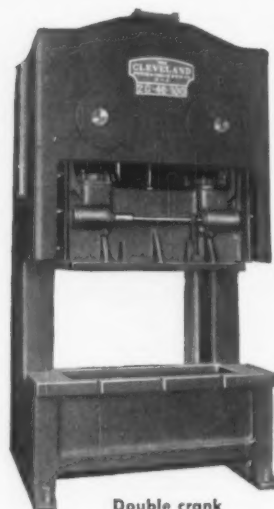
Investigate the opportunities for savings in production costs with any of Cleveland's eleven different types of presses equipped with the patented Cleveland Drum Type Friction Clutch.

Designed with a minimum number of parts, this patented Cleveland clutch weighs less, uses less power, is easily adjusted, can be readily serviced right on the press. It assures minimum down-time, lower operating costs, quicker starting and stopping to boost production.

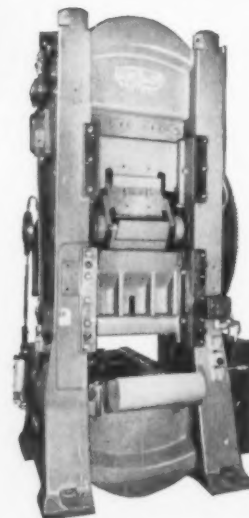
Get the facts on the production economy built into every Cleveland Press equipped with this Cleveland Drum Type Clutch. Write or call today!



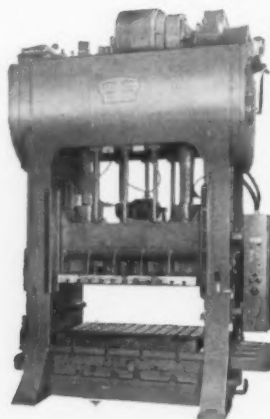
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single crank press



Double crank
open back gap press



Knuckle joint press



Two-point
straight-sided press



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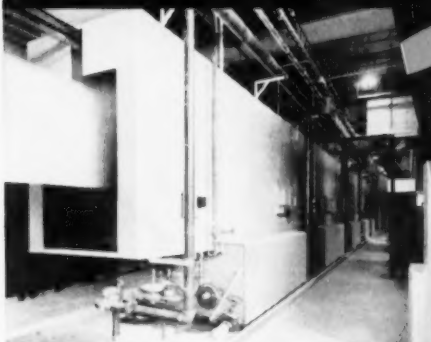
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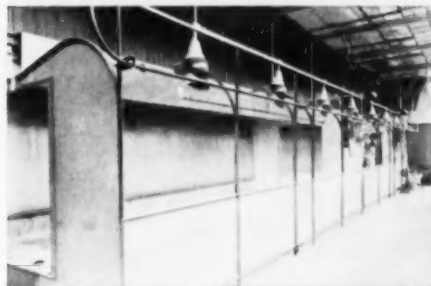
... for ENAMELS • LACQUER • PAINT • VARNISH



Mahon Five-Stage Metal Cleaning and Rust Proofing Machine—Part of the Complete New Mahon Finishing System at Hussmann.



Mahon Dry-Off Oven at Exit End of Cleaning and Rust Proofing Machine. Oven Controls are visible in the foreground.



48 Ft. Mahon Hydro-Filter Spray Booth in foreground. Another 24 Ft. Spray Booth for reverse side painting is visible in the background. Note Filtered Air Diffusers in the Ceiling.



Equipment Room between Finish Baking Oven and Air Supply Room. This room houses Heating Equipment and Controls for both Units.



Mahon Self-Housed Finish Baking Oven installed on the Roof of the Hussmann Refrigerator Co. Plant. Air Intake, Filtered Air Supply Equipment and Heaters are Housed at the far end.

... the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!

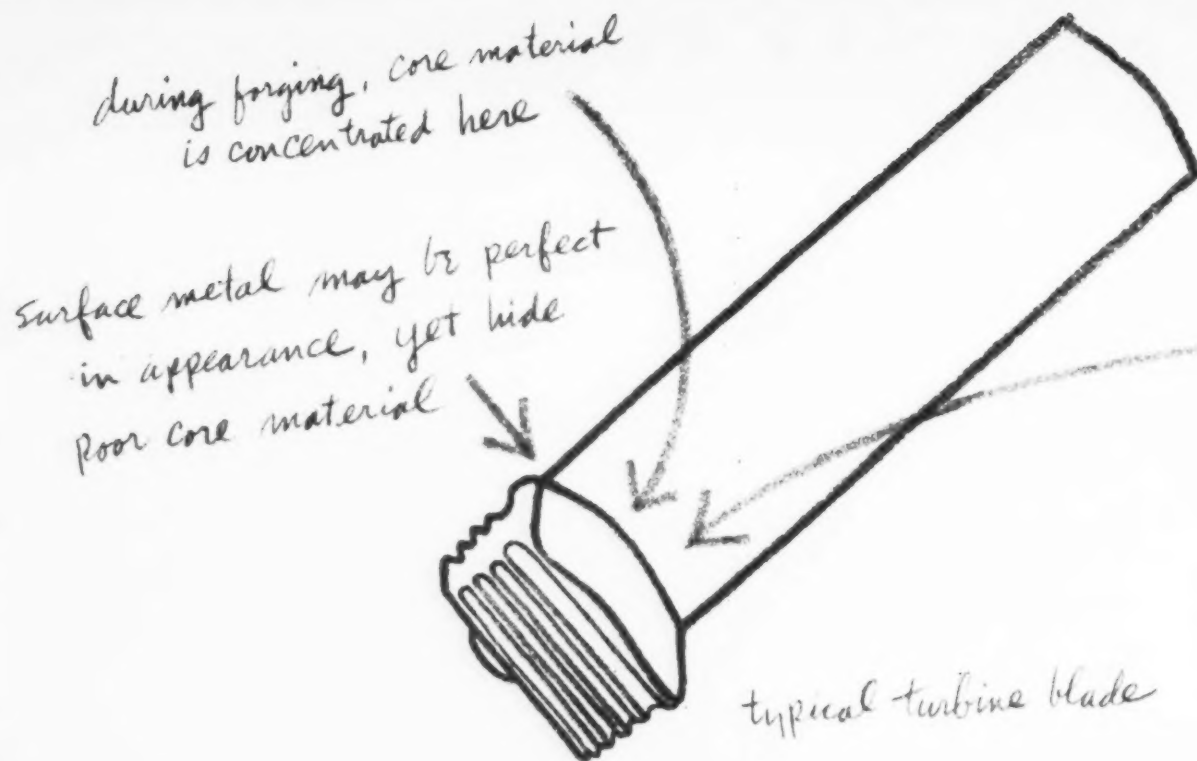
Mahon Installs **THIRD COMPLETE FINISHING SYSTEM** in Hussmann Refrigerator Plant!

In addition to several smaller projects, the Mahon Company has installed three Complete Finishing Systems for the Hussmann Refrigerator Co., St. Louis, Mo. The latest one, illustrated here, was designed to paint steel shelving. It consists of a five-stage Metal Cleaning and Rust Proofing Machine, a Dry-Off Oven, two Hydro-Filter Spray Booths, an Air Conditioned Spray Room, and a Finish Baking Oven. The Cleaning and Rust Proofing Equipment, Dry-Off Oven and Spray Room are located inside the plant; the Filtered Air Supply Equipment and the Finish Baking Oven are housed on the roof. This is a typical Mahon Finishing System designed to occupy a minimum of floor space inside the plant, and to do a particular finishing job efficiently and economically. Repeat orders from customers over a period of years is an unquestionable expression of confidence in the Mahon organization, and it is an unspoken tribute to Mahon engineering, and to the quality and operating efficiency of Mahon equipment. If you have a finishing problem, or are contemplating new finishing equipment, you, too, will want to discuss methods, equipment requirements and possible production layouts with Mahon engineers . . . you'll find them better qualified to advise you, and better qualified to do the all-important planning, engineering and coordinating of equipment, which is the key to producing the finest finishes at minimum cost. See Sweet's Plant Engineering File for information, or write for Catalog A-658.

THE R. C. MAHON COMPANY • Detroit 34, Michigan
SALES-ENGINEERING OFFICES in DETROIT, NEW YORK and CHICAGO

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning, Pickling, and Rust Proofing Equipment, Hydro-Filter Spray Booths, Dip and Flow Coaters, Filtered Air Supply Systems, Drying and Baking Ovens, Cooling Tunnels, Heat Treating and Quenching Equipment for Aluminum and Magnesium, and other Units of Special Production Equipment.

MAHON



MEL-TROL

Tough, modern applications are making uniformity of metals more important than ever before. In the turbine blade sketched here, for instance, porosity or segregation just can't be tolerated, because it may cause a rejected part or a weak one.

Mel-Trol is Carpenter's answer to industry's challenge for better, more uniform alloys. Now, for the first time, you can be sure you're getting alloys that are as strong and tough at the core of the bar as just under the surface . . . uniform throughout and

uniform lot after lot. You can make more good parts, fewer rejects. You can know in advance the kind of results you can expect when you work these alloys, and when parts go into service.

Mel-Trol is a careful system of highly developed quality control procedures. It uses patented Carpenter techniques along with the most modern equipment available to the steel industry. Every control is used to its fullest capability—its greatest accuracy. The result is the most completely refined

strength critical here, because stress concentrates here. Any centerline weakness may cause cracks in forging or eventual failure in service. Mel-Trol alloys are uniformly strong and free from segregation, ideal for applications like this because metal at core of Mel-Trol alloy is always as tough as metal nearer surface.

**...there's uniform freedom from
centerline weakness, porosity and
segregation in alloys made by this
exclusive *Carpenter* process**

and perfected steelmaking process used in any known steel mill today. It eliminates the problems of centerline weakness, segregation and other internal defects by eliminating their causes.

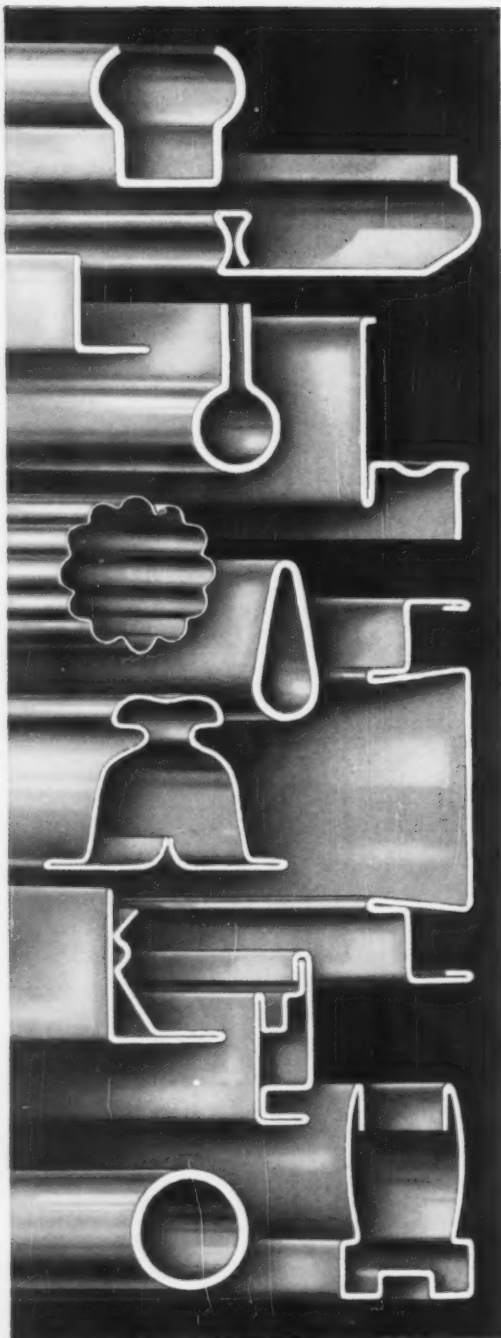
There's a Carpenter Representative in your local area who can show you how Carpenter Mel-Trol alloys can answer the demands of specific applications. Call him today.



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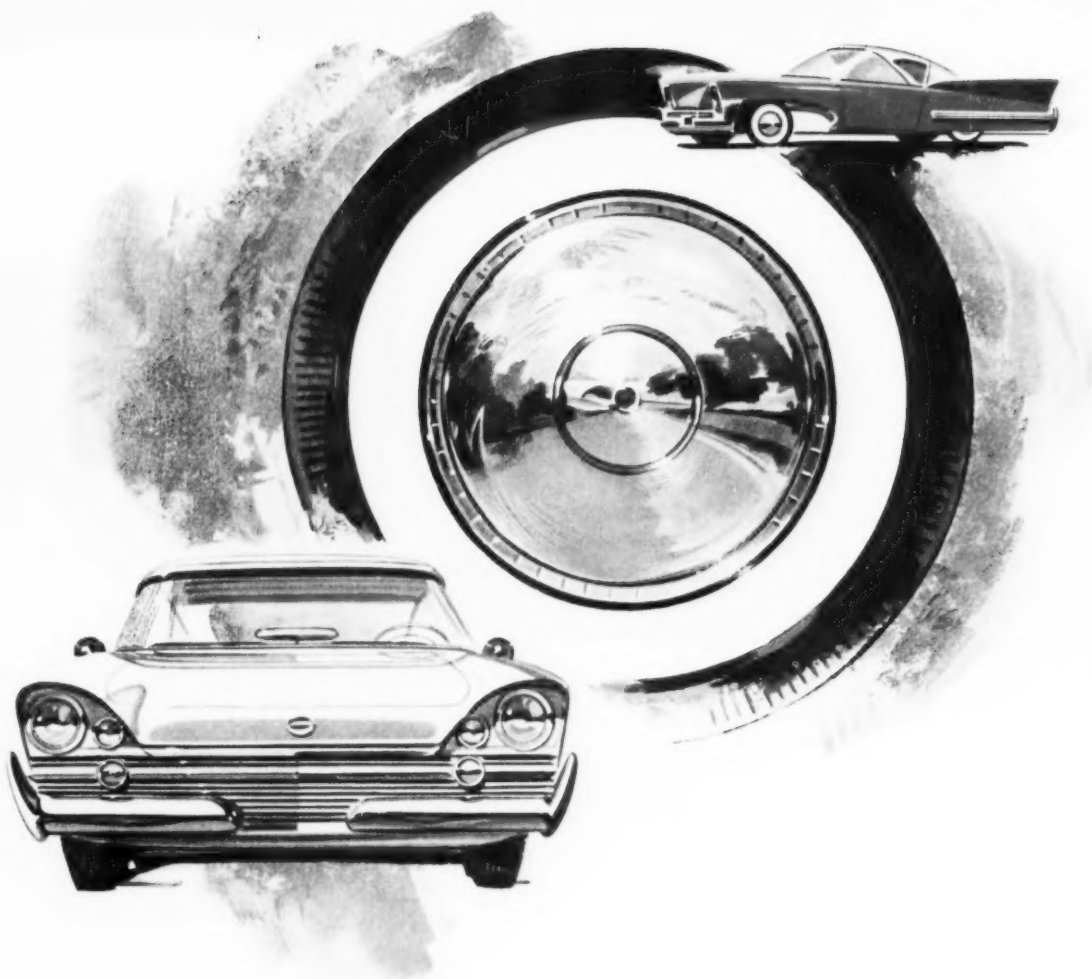
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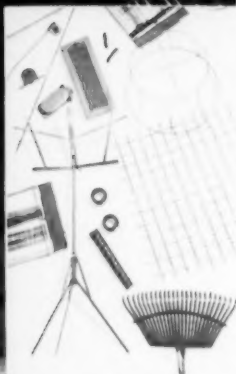
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STONE MODEL T-20

"Slices" THROUGH STAINLESS STEEL

This new Stone Model T-20 Traverse-Type Cutting Machine cuts one-inch stainless steel at approximately 3 feet per minute.

The Stone T-20 cuts ferrous, non-ferrous and non-metallic sheet and plate.

CLEAN CUTTING ... HIGH SPEED ... ACCURATE

The new Stone T-20 Model is the result of more than three years of engineering. It's the most versatile and rigid completely-hydraulic-operated traverse-type machine on the market today. Each feature of the T-20 is designed for speed and accuracy *with* safety. Hydraulic lateral feed 0-50' speed per minute. The speed of raise and lower of

cutting head is from 0-10' per minute. Length of cut 12' with raise and lower 24'.

SPECIFICATIONS STONE MODEL T-20

Capacity: 4" ferrous or 8" non-ferrous depending on material. Consult our engineers.

Size: 21' x 8' x 8'

Weight: 12,000 to 14,000 lbs.

Arbor Speed: 2360 RPM (others from 630 to 2900)

Actual Cutting Times: 1" x 10'—3 min., 45 sec.

3/4" x 5'—1 min., 15 sec.

Full 20 H.P. geared-in-head, T.E.F.C., induction type, continuous duty motor

Wheel Diameters: 20" x .150 to .170 (Larger diameters upon request)

Arbor Size: 1 3/4"

Heavy Duty 8" steel wheel flanges. Cuts with an abrasive wheel on ferrous metals, steel saw blade with oil mist spray on non-ferrous.

STONE MODEL T-20

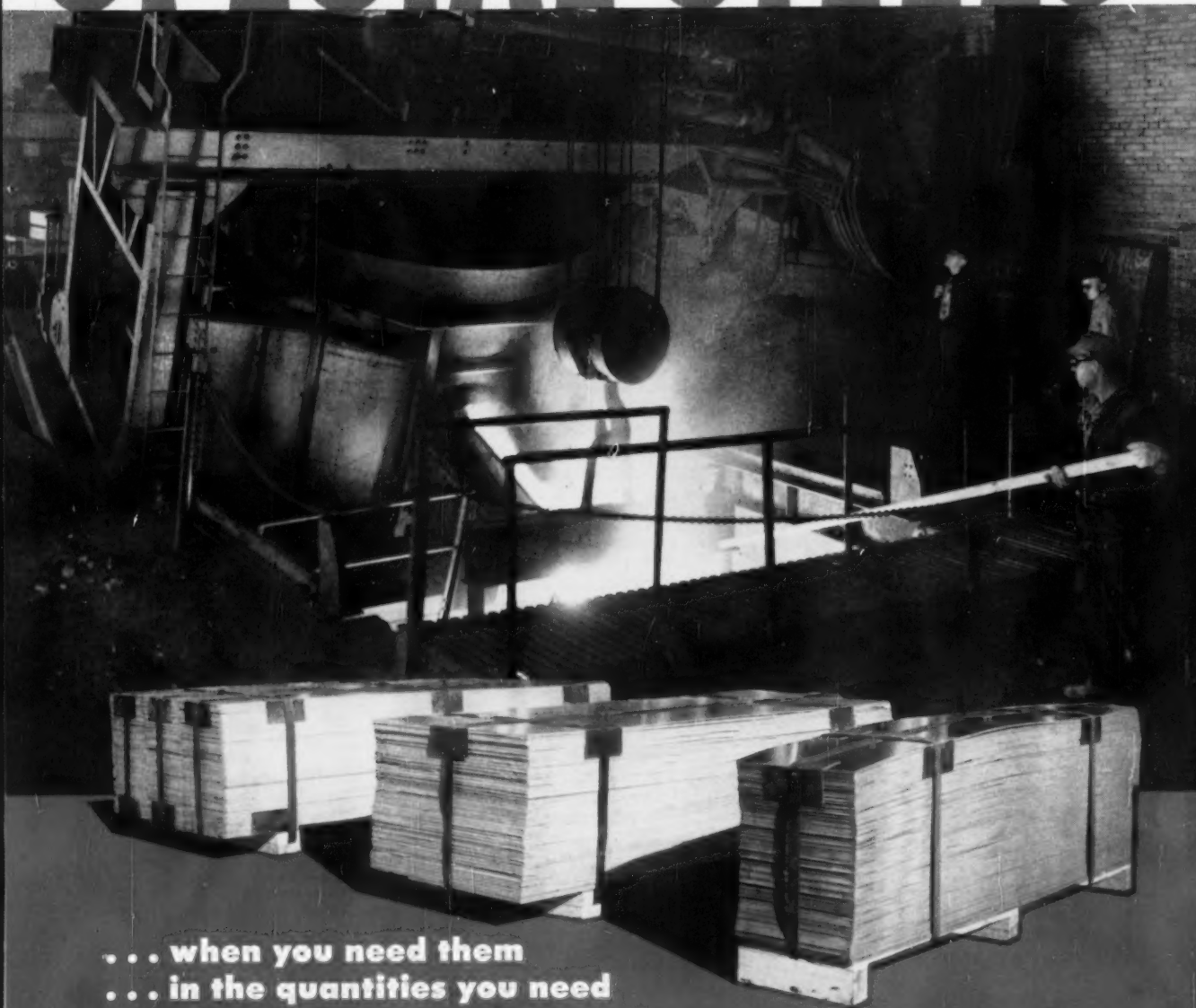
Traverse Cutting Machine pictured at Rolled Alloys Plant, South River, N. J.

The patented revolutionary type of stainless sealed-roller ways pre-loaded, permit long, continuous, trouble-free operation. Has a totally enclosed heavy-duty floating type steel safety guard, parallel work stop gauge and positive clamping device.

Write for more information

STONE MACHINERY COMPANY, Inc. 171 FAYETTE ST.
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... in the quantities you need
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deliveries. And Ingersoll's modern quality-control facilities mean dependably uniform high quality from one order to the next. On all these counts, it will profit you to consult Ingersoll—a good name to know, a good place to go for the special steels you need.

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Ingersoll STEEL DIVISION
Borg-Warner Corporation
New Castle, Indiana

A Review of the Phosphate Coatings

Specified for the Protection of Metal Surfaces

By HUGH GEHMAN, Assistant Manager, Product Development Dept., AMERICAN CHEMICAL PAINT COMPANY

Phosphate coatings are protective inorganic finishes that actually change the chemical nature of metal surfaces. The metal reacts with the applied phosphate solution to form a nonmetallic, crystalline coating which serves to:

- Improve paint adhesion
- Provide protection against corrosion
- Increase lubricity of friction surfaces
- Facilitate mechanical deformation of metals
- Decorate—in many instances

Satisfactory protection of steel, zinc and aluminum surfaces against corrosion, paint peeling and blistering, and hard wear requires precision methods of chemical conversion coating.

Types of Conversion Coatings

There are seven classes of chemical conversion coatings commonly specified and used throughout industry today. They are as follows:

Zinc-iron phosphate (ACP Granodine®). This is the heaviest type of coating (gray in color) used for prepaint treatments on steel, iron and zinc surfaces. The process requires five or six operations: cleaning; rinsing; rust removal, if necessary; coating; rinsing; and a second rinse. Coating weight ranges from 100 to 600 mg per sq. ft.

Medium or large volume production of automobile bodies, appliances, projectiles and cabinets can be handled effectively.

The coating solution improves paint adhesion by forming a crystalline deposit over the metal surface. This deposit is rough, as revealed microscopically, and so offers an ideal gripping surface for paint particles.

Manganese-iron phosphate (ACP Thermoil-Granodine®). This is a heavy black coating used on friction surfaces to prevent galling, scoring and seizing of parts. Typical metal parts treated are pistons, piston rings, gears, cylinder liners, camshafts, tappets and various small arms components.

Iron phosphate (ACP Duridine®). This is a comparatively new process that places a light coating on surfaces for improved paint adhesion. Since cleaning and coating occur in the same bath, it has only three to five stages.

The iron phosphate treatment is a spray process suited for medium to large volume, large or small work. Pre-cleaning is normally unnecessary, an economy factor in its favor.

Products protected by this process are steel or iron fabricated units, such

as cabinets, washing machines and refrigerators. Weight of coating is 50 to 100 mg per sq. ft.

Zinc phosphate (ACP Lithoform®). This is a crystalline coating produced on galvanized iron and other zinc surfaces—also cadmium—for improving paint adhesion. The purpose of the coating is to provide a paint-gripping surface and to prevent the reaction between acidic components of the paint and the zinc metal, with the formation of soaps and loss of paint adhesion.

This coating is applied in weights of 75 to 500 mg per sq. ft. There are no limitations on volume or production or on size of products treated. Zinc phosphate coating is used on zinc alloy die castings, zinc or cadmium plated sheet or components, hot dip galvanized stock, and Galvanneal.

Amorphous phosphate (ACP Alodine®). This is a relatively new protective coating for aluminum and aluminum alloys. It may be used in place of anodic deposition for improved paint adhesion and corrosion resistance.

This coating is practical for production in any volume. Coating weight is 100 to 600 mg per sq. ft. Products treated include helmets, belt buckles, aircraft and aircraft parts, bazookas and rocket motors, roofing and siding. Particularly good when aluminum is painted prior to forming.

Zinc-iron phosphate for oil absorption (ACP Permadrine®). This is a relatively heavy coating adapted to the retention of rust-inhibiting drying or nondrying oils and waxes on ferrous metal surfaces. The coating is applied to a weight of 1000 to 4000 mg per sq. ft.

The process is satisfactory for large or small work in any volume—nuts, bolts, hardware, guns, tools, etc.

Zinc-iron phosphate for metal forming (ACP Granodraw®). This is a specialized coating used in conjunction with a suitable lubricant to facilitate the cold mechanical deformation of steel. The coating acts as an anchor for the lubricant throughout drawing, extrusion, and cold forming operations.

It is a successful treatment for products such as blanks and shells for cold forming, heavy stampings, impact extruded shapes, drawn wire and tube.

For more complete information about any one or all of these chemical conversion coatings, contact an ACP sales representative or write us at Ambler, Pa.

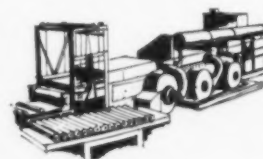
Typical Installations of Phosphate Coating Systems



Customer: Truck manufacturer

Problem: Preparing cab parts for painting

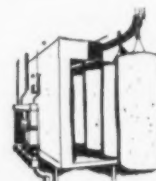
Cycle: Phosphate wash; phosphate wash; rinse; chromic acid rinse; dry



Customer: Aluminum screen manufacturer

Problem: Final finish of aluminum shade screen

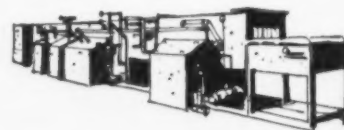
Cycle: Wash; rinse; phosphate coat; rinse; chromic acid rinse; dry



Customer: Water heater manufacturer

Problem: Preparation of water heater shells for synthetic enameling

Cycle: Phosphate wash; rinse; chromic acid rinse; dry



Customer: Hardware manufacturer

Problem: Preparing hardware parts for painting

Cycle: Wash; rinse; phosphate coat; rinse; chromic acid rinse; dry



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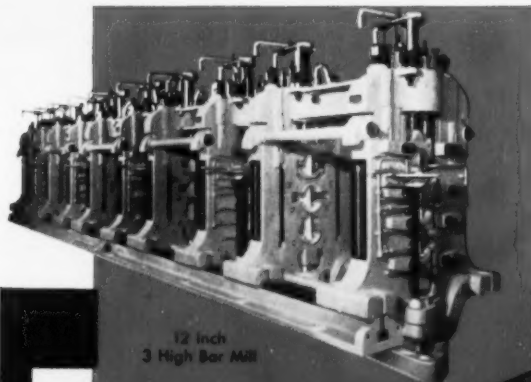
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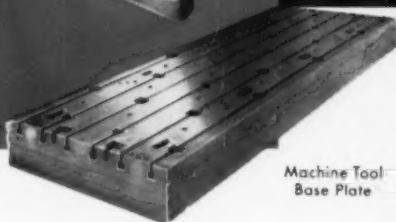
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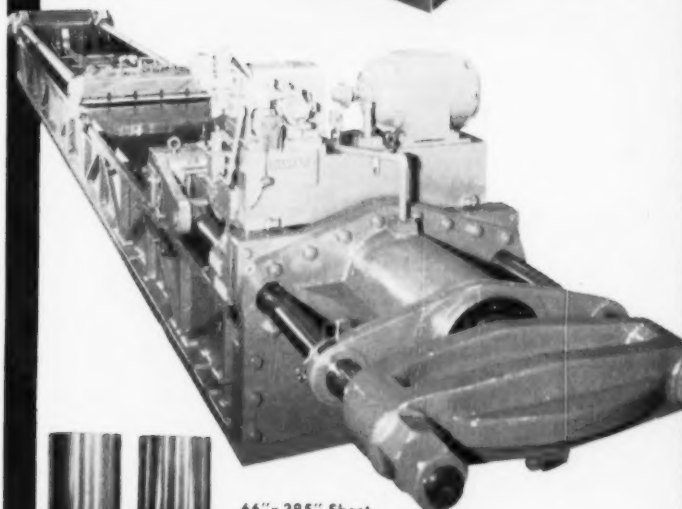
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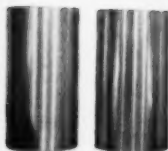
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Base Plate



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And, it's your assurance of top performance.

Our engineers will be glad to work with you on any special Roll or Rolling Mill Equipment.

A "RED CIRCLE" ROLL FOR EVERY PURPOSE

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Moly Rolls ... Cold Rolls ... Sand
Rolls.

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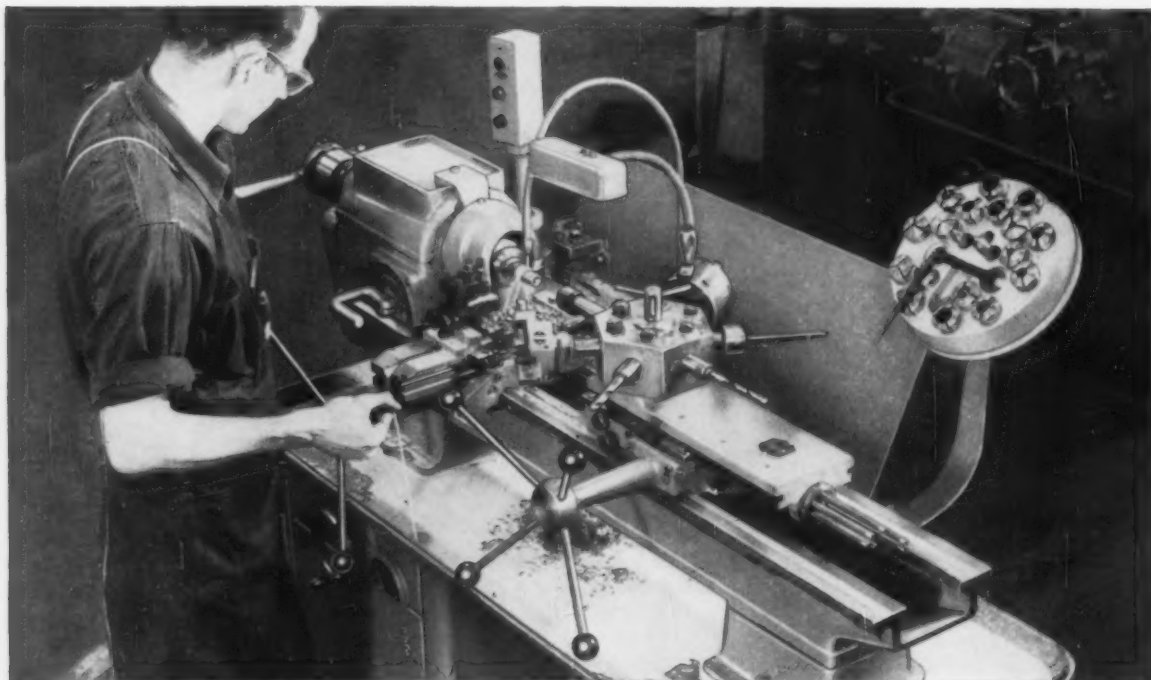
Hyde Park

FOUNDRY & MACHINE CO.

HYDE PARK, WESTMORELAND COUNTY, PITTSBURGH DISTRICT, PA.

ROCKWELL-BUILT

NEW DELTA HAND SCREW MACHINE



Cuts production costs on multiple machining jobs

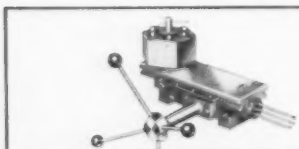
Here is a precision machine engineered to fill the wide gap between standard engine lathes and expensive automatic screw machines . . . and at lower cost than *any* comparable machine!

Bed turret, double tool post cross slide and lever type collet closer are included as *standard equipment*. But you don't pay for lathe components you don't use—the carriage, quick change gear box, gear train, gear rack and tail stock.

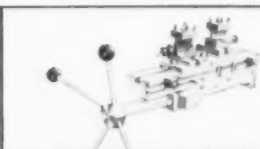
Delta Quality Features such as perfected Variable Speed Drive and unique Drive Selector

offer greater flexibility, assure proper speed and power for each operation. In addition you get the hefty Delta head stock with matched "V" belts in the final drive to the spindle.

Convert Your Delta 11" Lathe to a Hand Screw Machine by adding the three accessories pictured below and removing the carriage and tail stock assemblies. This gives you the double versatility of a ram-type turret lathe for production operations, and a standard engine lathe for toolroom, maintenance and experimental work.



BED TURRET has a self-indexing, six-station head built for heavy duty. It offers a full $4\frac{1}{2}$ " tool clearance over the ram and a $7\frac{1}{2}$ " maximum working stroke.



DOUBLE TOOL POST CROSS SLIDE features exclusive, new pilot wheel feed for greater safety, speed and convenience. Provides full 8" travel, extra clearance for tools held in bed turret.



LEVER TYPE COLLET CLOSER takes bar stock up to $1\frac{1}{4}$ " diameter. Used with all S-C collets. Bars can be fed, chucked, machined and released without stopping the spindle.

See the Hand Screw Machine at your nearest Delta Dealer . . . he's listed under "TOOLS" in the Yellow Pages.

GET ALL THE FACTS on Delta's new Hand Screw Machine, full line of accessories and the complete line of metalworking lathes. Write for **FREE** Delta Industrial Catalog: Rockwell Manufacturing Co., Delta Power Tool Div., 640A N. Lexington Ave., Pgh. 8, Pa.

DELTA POWER TOOLS

another fine product by

ROCKWELL





ROLLWAY THRUST BEARINGS...

→ $\int_{2''}^{36''}$ *Design + precision + quality that
do the job in the one best way...*

Size in Rollway Thrust Bearings—big or little—is a mere matter of operating “geometry” and of the machinery to produce it. But design, precision and quality are dimensionless quantities that vary widely according to loads, speeds, temperatures . . . yet in the end sum up to a single constant: *“To do the job required in the one best way.”*

Of course, we’re proud of this 2¼ ton bearing with its thrust load capacity of 4,630,000 lb., its diameter of

almost 3'-0" and its 3 roll assemblies with 6 precision thrust plates matched to equalize load and deflections for each stage. But we’re equally proud of the little 2 inch in Design Engineer Grigson’s hand. Despite the great difference in size, each has been carefully worked out *“to do the job required in the one best way.”*

Whether you want a bearing for an oil rig, an extruder, a pulp mill jordan, a crane hook, a heavy duty lathe and countless other uses, Rollway has one that will do the job “in the one best way.”

5 Standard Types:

- Single aligning
- Double aligning
- Tandem
- Single acting
- Double acting
- Special-purpose types to your order

Our engineers will gladly consult with you regarding the standard or special-purpose types you need.

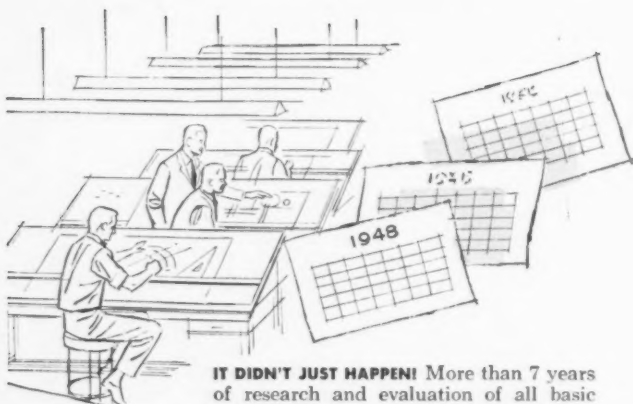


ENGINEERING OFFICES: Syracuse • Boston • Chicago • Detroit • Toronto • Pittsburgh • Cleveland • Milwaukee • Seattle • Houston • Philadelphia • Los Angeles • San Francisco

Behind the scenes

ANOTHER FIRST

from KEARNEY & TRECKER



IT DIDN'T JUST HAPPEN! More than 7 years of research and evaluation of all basic methods of drive transfer were analyzed by dozens of Kearney & Trecker engineer-specialists, all for the sake of perfecting *this most practical design system* for driving twin-elevating screws.

ONE BY ONE, VARIOUS DRIVE METHODS WERE ELIMINATED!

Helical, bevel, herringbone gears, worm and wheel and chain drives... all were rejected for one or more reasons... cost, complicated design and resulting maintenance difficulties, lack of consistent accuracy, excess wear and heat generation problems.

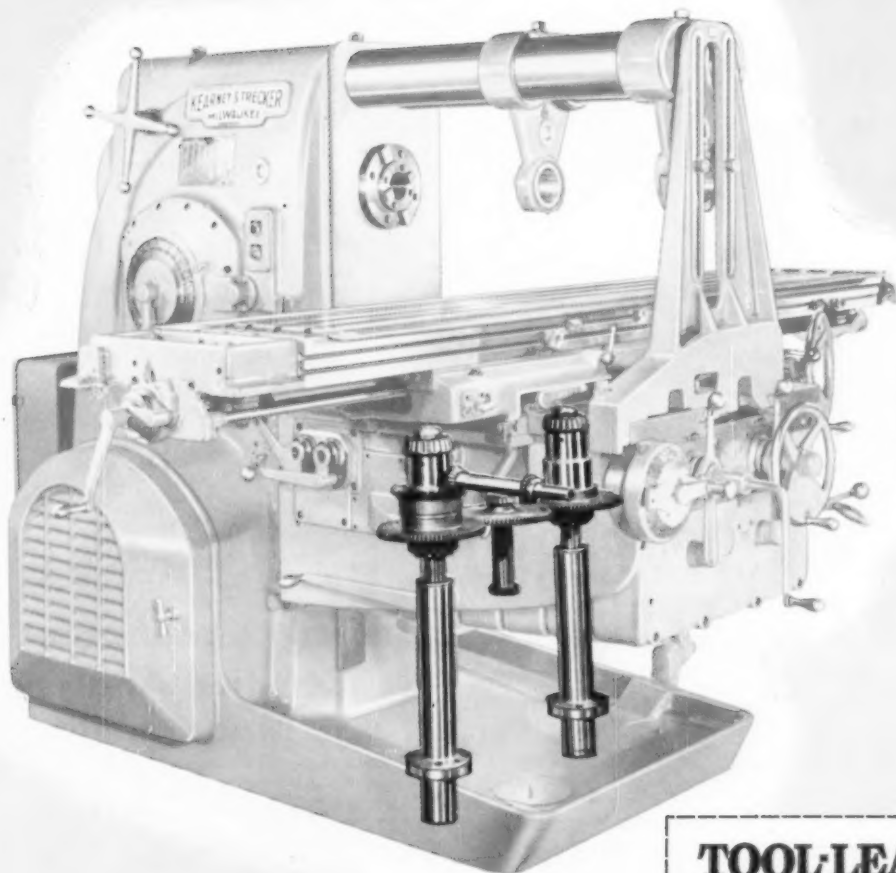


It's the ultimate in drive transfer methods for maintaining perfect synchronization of exclusive twin-elevating screws on TF Series knee-type milling machines. Pace-making design offers maximum accuracy far beyond previous heavy duty knee-type designs.



FINALLY, SIMPLE, COMPACT, SPUR PLATE GEAR DRIVE PROVES BEST! Optimum 3-gear system with wide center distance between screws gives maximum support to knee. Large gears allow more teeth... reduce error. Screws rotate in same direction, make it possible to match them accurately... no differential error between screws.

of a very important development



**Hundreds of users know...
TWIN ELEVATING SCREWS
REDUCE DEFLECTION AND
INCREASE ACCURACY
3 TIMES...**

over heavy duty single screw design
milling machines.

FULL FACTS FREE!

Write for Bulletin TF-57 on your letterhead.

KEARNEY & TRECKER CORP.

6792 W. National Ave. • Milwaukee 14, Wisconsin

TOOL-LEASE

Should you desire, you can conserve capital, reduce obsolescence using Kearney & Trecker Tool Lease program. It applies to all TF Series milling machines with exclusive twin-screw knee support as well as other Kearney & Trecker machine tools.

Write for complete Tool Lease program.



Designers and Builders of Precision and
Production Machine Tools Since 1898

A "Plus" Service for STEEL USERS

**BLISS & LAUGHLIN
MACHINABILITY CHART**

LIGHT TO MEDIUM MACHINE CAPACITY		MEDIUM TO HEAVY MACHINE CAPACITY To 2 1/2"		HEAVY TO EXTRA HEAVY MACHINE CAPACITY OVER 2 1/2"	
Size	SFM	Size	SFM	Size	SFM
To 1/2"	119	To 1/2"	115	To 1/2"	115
To 1"	114	To 1/2"	111	To 1/2"	111
To 1 1/2"	110	To 1"	107	To 1"	107
To 2"	102	To 1 1/2"	102	To 1 1/2"	102
To 2 1/2"	94	To 2"	94	To 2"	94
To 3"	88	To 2 1/2"	88	To 2 1/2"	88

B STRAIN TEMPERED[®] BAR STEELS . . .

WHEN you order C-1144 Strain-Tempered Steel, you get two important services, which are extra advantages offered exclusively by Bliss & Laughlin, Inc.

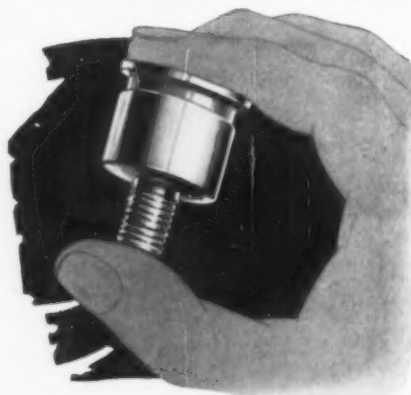
First: You receive a notarized Certificate of Analysis that assures the steel has met B&L quality standards of chemical composition, strength and hardness.

Second: You are furnished with a machined test part (from your lot of steel) produced on an automatic bar machine in our own laboratory at the speeds and feeds recommended on the B&L Machinability Chart.*

This test information will serve as a guide in working out your own machining setup, and will help you to obtain maximum results in fabricating B&L Strain-Tempered Steels.

Write for Bulletin #58

**Certified Analysis and
Machinability Tests**



*This Machinability Chart is available on request. Write for your copy.

BLISS & LAUGHLIN, INC.

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SALES OFFICES
IN ALL PRINCIPAL CITIES

FOUR PLANTS:—



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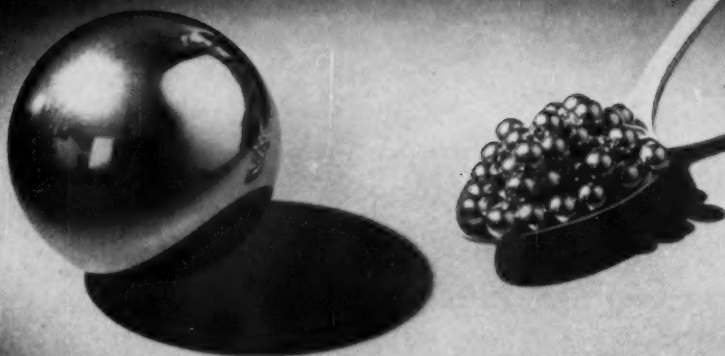


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you are assured uniform high quality . . . finest in industry! That's why most major ball bearing manufacturers are among Hoover's best customers. Years of experience, unmatched processing and quality control methods pay off in superior, uniform quality for which all Hoover Balls are famous. For example, Hoover's Grade "O" Micro-Velvet Chrome Balls, are accurate within 10 millionths of an inch.

you get prompt delivery and hoover know-how. Hoover has been manufacturing balls since 1913. Current production capacity, utilizing the most modern machines and methods, is now so great that orders for millions of balls are met on schedule every month . . . your assurance of quick action, prompt delivery.

For quality balls in quantity, you can depend on Hoover.

Micro-Velvet is a Hoover Trademark.

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THE IRON AGE, January 2, 1958



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IA-18



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This sturdy lightweight carton not only saves on shipping costs, but reduces the chance for pilferage as well. Easily stored and handled, too—measures only 29 by 39 inches across, and 11 inches high, including the standard three-inch pallets.

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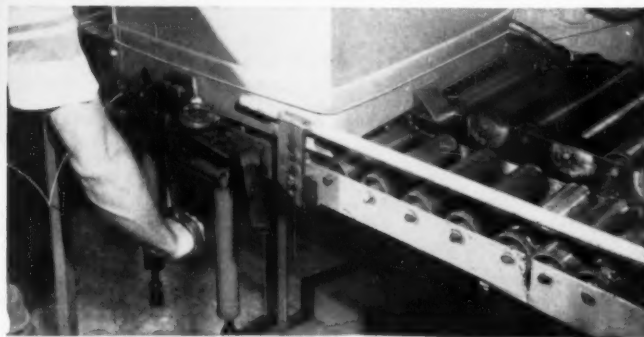
World's largest producer of secondary nickel alloys of certified analysis

"A switch to USS Gerrard Steel Strapping boosted our production 100%"

... says E. K. Buchholz, Plant Manager, Lawson Manufacturing Company, New Kensington, Pa.



Close-up of crew strapping bottom of carton with 16-gage USS Gerrard Round Steel Strapping. The machine is a Model N mounted in a special jig allowing it to be raised and lowered.



THE LAWSON COMPANY produces quality water heaters ranging from 20 through 120-gallon capacities. Originally, all Lawson heaters were shipped in wooden crates that required 80 hand-driven nails.

To cut production costs, Lawson switched the packaging of 20 through 50-gallon tanks from wooden crates to 350-pound test cardboard cartons, bound top and bottom with Gerrard Round Strapping. The closed cardboard container not only keeps the product clean, but the carton is easily handled and also displays a large product-identity symbol.

To attain production-line speed, Lawson uses two Gerrard Model N machines. As the cartoned heaters roll along a line, the carton bottom is secured by the first strapping machine. Six feet further along the line, a second crew straps the carton top with a second Model N, as shown in the main illustration. Elimination of the time-consuming crating operation has increased production 100% and reduced packaging costs considerably.

USS Gerrard Steel Strapping can probably solve your packing problems, too. Learn more about USS Gerrard Round and Flat Strapping from the new 36-page Gerrard Blue Book of Packaging.

GERRARD STEEL STRAPPING

— ROUND AND FLAT —



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U. S. STEEL SUPPLY DIVISION
United States Steel, General Offices: Chicago, Illinois

UNITED STATES STEEL

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- ☐ Folder on Automatic Strapping Machine

Name

Company

Address

City State



Cleveland adds the NYLOK self-locking feature to its complete line of socket screw products

SELF-LOCKING MINIATURE CAP AND SET SCREWS AVAILABLE IN ALL STANDARD DIAMETERS FROM SIZE #0

Cleveland Nylok® socket screws are self-locking—won't work loose. The locking device is a tough, resilient nylon pellet that forces the mating threads firmly together. All auxiliary locking devices are eliminated. Seated or unseated, these screws lock wherever wrenching stops. Because of "plastic memory," the pellets tend to recover their original shape, and screws can be used repeatedly.

These self-locking screws will not gall or damage threads or seating surfaces even when used with soft or die cast materials. The set screws can be used with hardened shafts, since they lock against the threads of the tapped holes. Cleveland Nylok screws are not affected by aging or by temperatures from -70° to $+250^{\circ}\text{F}$.

Save on production time by using Cleveland Nylok self-locking socket screws. By eliminating auxiliary locking devices, you simplify design and reduce the size and weight of components, as well as your fastener inventory. Write today for literature and prices.

*T.M. Reg. U.S. Pat. Off., The Nylok Corporation

Only Cleveland can supply both hexagon head cap screws and socket screw products with the Nylok self-locking feature — from stock

CLEVELAND SELF-LOCKING SOCKET SCREW PRODUCTS
UNIFIED THREADS — CLASS 3A FIT

Type	Standard Sizes (diam.)	Material
Socket head cap screws	#0 to 1 in. (larger sizes avail.)	Alloy steel, heat treated or Nonmagnetic 18-8 stainless
Set screws (cup, half dog, flat, cone or oval points)	#0 to 1 in. (#0-#3, cup point only)	Alloy steel, heat treated or Nonmagnetic 18-8 stainless (to $\frac{1}{2}$ in., cup point only)
Flat head socket cap screws	#4 to $\frac{3}{4}$ in.	Alloy steel, heat treated
Button head socket cap screws	#4 to $\frac{3}{4}$ in.	same
Shoulder screws (stripper bolts)	$\frac{1}{4}$ to $\frac{3}{4}$ in.	same
N.P.T.F. (Dryseal) pressure plugs	1/16 to 1 1/4 in.	same

One alloy steel socket screw key is supplied in each standard package of Cleveland self-locking screws; also in bulk and as sets in key folds.



THE CLEVELAND CAP SCREW COMPANY 4444-1 Lee Road, Cleveland 28, Ohio

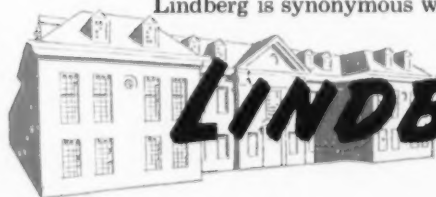
WAREHOUSES: Chicago • Philadelphia • New York • Los Angeles



How to find a better heat-treating method

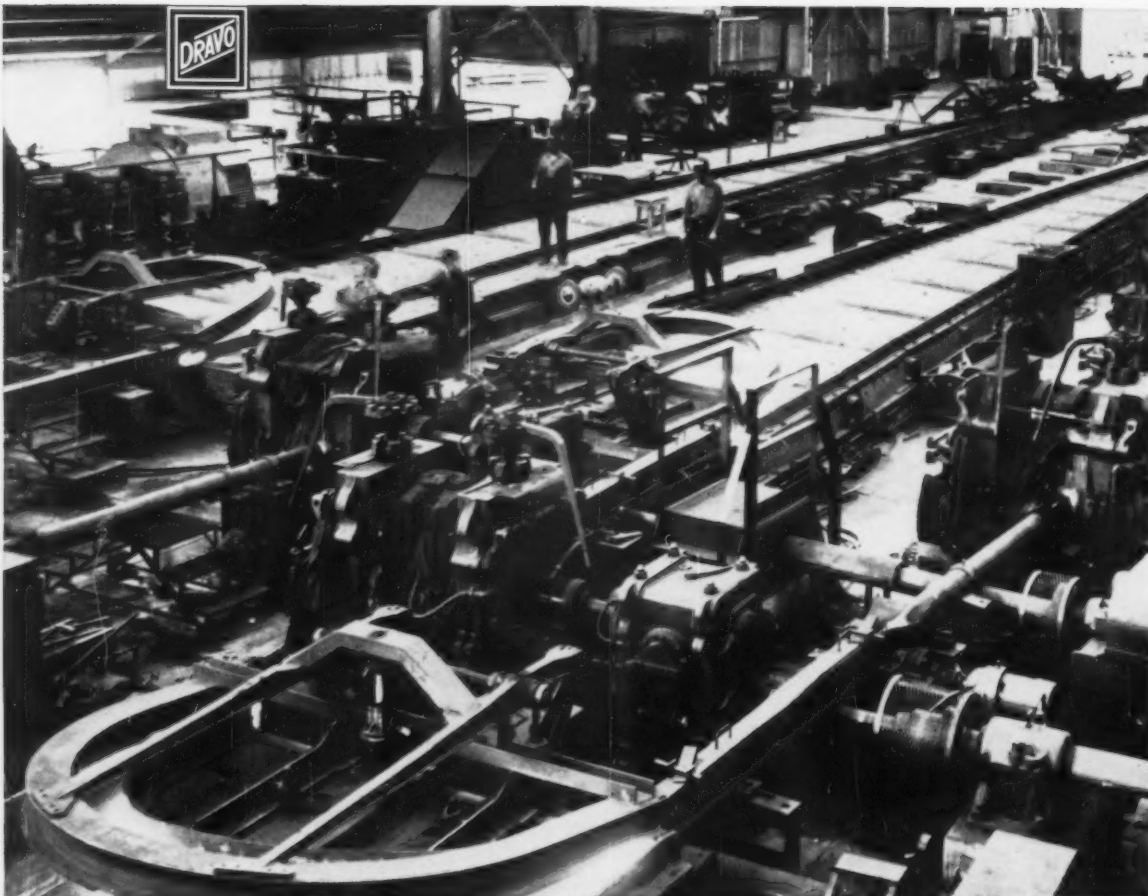
Here's a sound way to do it. Take your problems to the people who have consistently, over the years, provided the metal treating industry with new and better ideas, more efficient, more practical equipment. This will bring you to Lindberg, creators of the famous Cyclone type atmosphere furnaces, the long-life "dimple" vertical radiant tube, the revolutionary new CORRATHERM electric heating element and so many other innovations in better heat treating methods. Lindberg is synonymous with heat treating

furnaces. We build them for carbonitriding, carburizing, hardening, tempering, normalizing, bright stainless annealing, brazing, carbon correction, nitriding, or any other metal treating requirement. Give your production processes the advantages of Lindberg's forward look in "heat for industry" techniques. Get in touch with your nearest Lindberg Field Representative (See classified phone book) or write Heat Treating Furnace Division, Lindberg Engineering Company, 2452 W. Hubbard St., Chicago 12, Illinois.



LINDBERG

heat for industry



Automatic Lubrication for High Speed Bar and Rod Mill

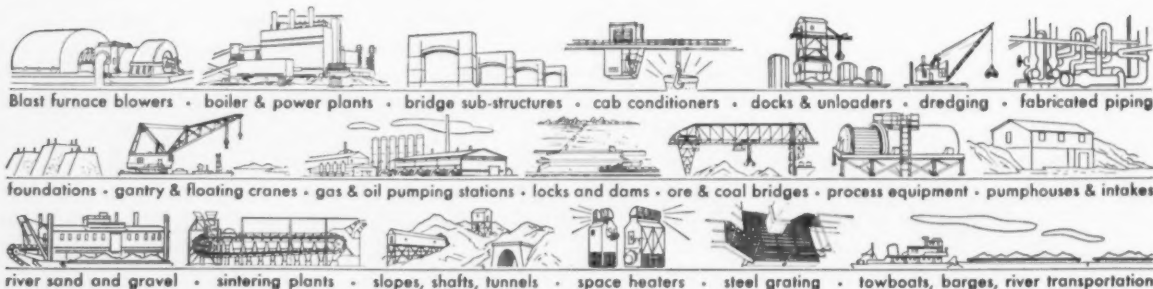
Rated as one of the fastest combination units in the world, Atlantic Steel Company's new \$9,000,000 mill in Atlanta produces three strands of rods simultaneously at a speed of 5000 feet per minute. Merchant bar is turned out at 30 to 80 tons per hour in a wide range of sizes and shapes.

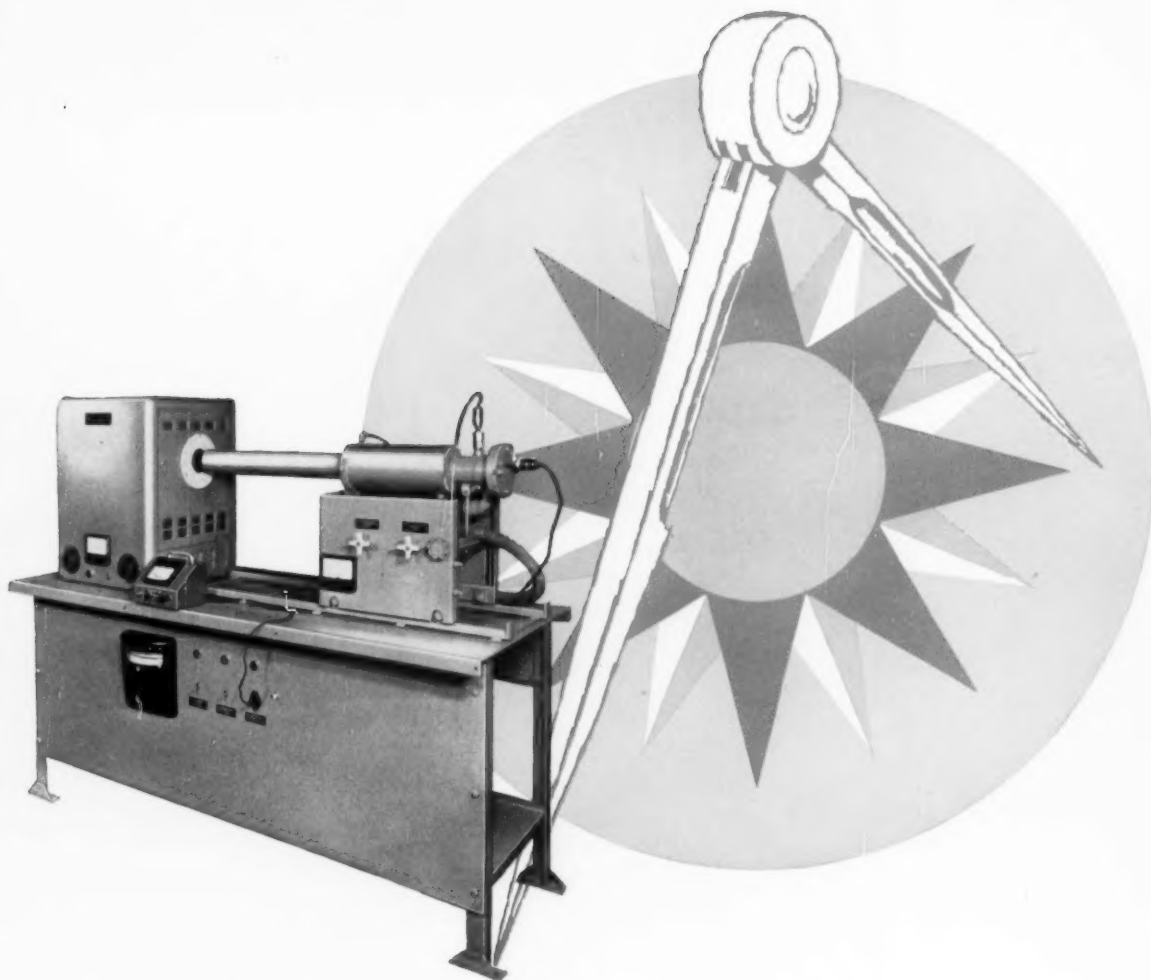
High speed operation of this plant demands continuous flow of

lubricant under difficult temperature and pressure conditions. To meet these demands, three specially-designed Dravo-DeLaval systems automatically cool and filter 475 gallons of oil per minute.

Information is available on Dravo-DeLaval lubrication systems or any of the products and services listed below. Write DRAVO CORPORATION, PITTSBURGH 25, PA.

DRAVO
CORPORATION





Pilot Plant Equipment ... a Lindberg Innovation

When there is something new in "heat for industry" most often it comes from Lindberg. The latest is a new line of Lindberg equipment now available that fills in a long-felt need in metal treating. Our engineers have designed a brand new group of furnaces to bridge the gap between laboratory and production line. This larger-than-lab, smaller-than-standard equipment is designed specifically for pilot plant use. You can test your materials, your methods, on equipment

moderately priced but production capable. Fuel-fired, electric and High Frequency units are included. Six different types of furnaces can be supplied including, as illustrated, an electric vacuum-type furnace ideal for testing this newest and most promising heat treating method. Get in touch with your nearest Lindberg Field Representative (See classified phone book) or write Pilot Plant Equipment Division, Lindberg Engineering Company, 2452 W. Hubbard St., Chicago 12, Illinois.



LINDBERG

heat for industry



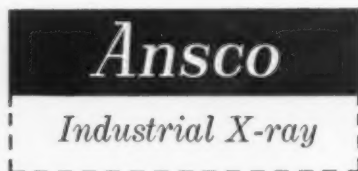
Hunter, hunted and hunting

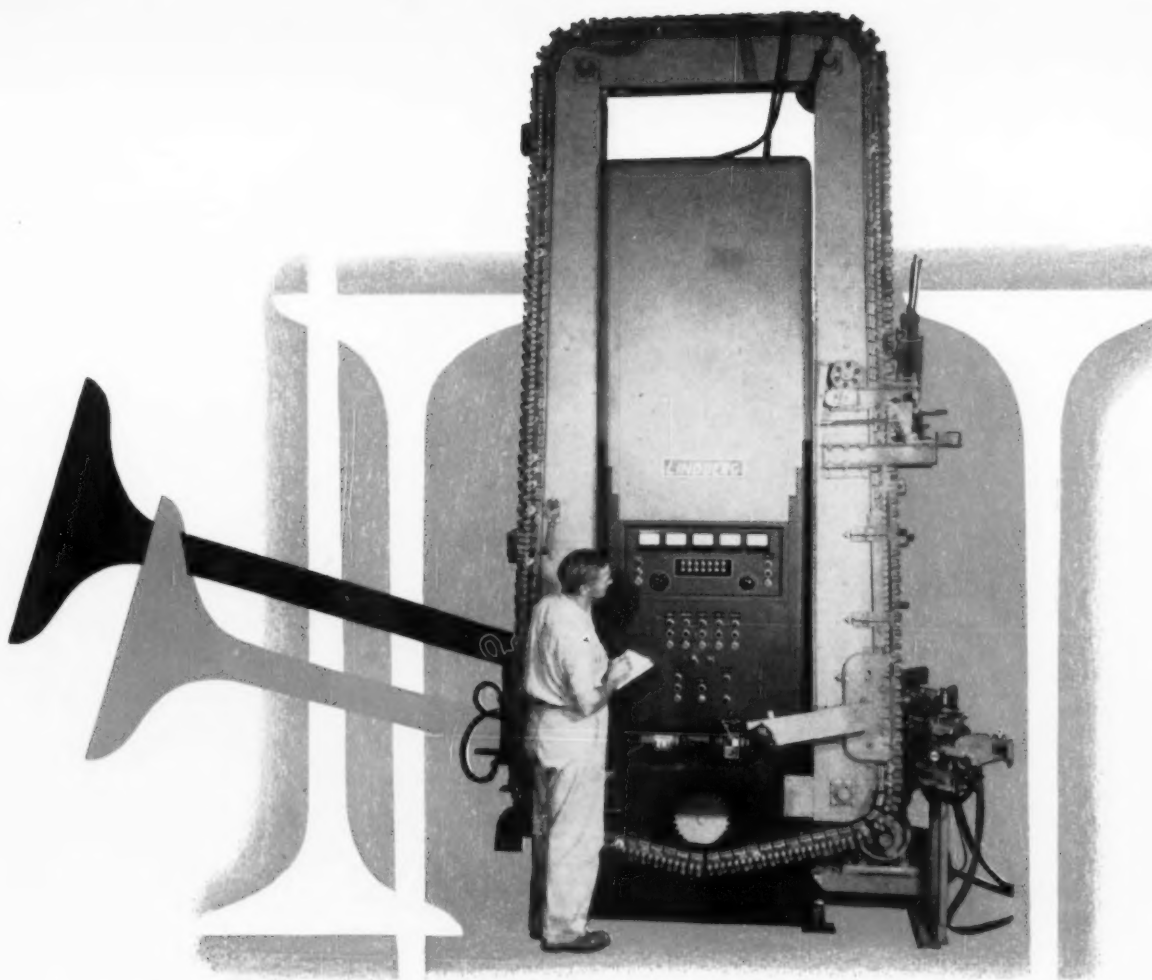
In the same way that Cats stalk birds and fish, industrial radiographers stalk minute flaws within metal parts. It is a job of stalking with certain x-ray films which have gradations and tones that are poorly separated.

But not so with Anso's brilliant line of Superay's. Here are emulsions that truly separate the most subtle tonal values into easily read warnings that predict a parts failure.

Choose the right Anso Superay film for the job, Superay "A" for general inspection work, Superay "C" where very high speed is needed, and Superay "B" for high resolution, fine grain, critical work. All films of superlative quality that makes for easy readability of even the subtlest imperfection.

Stop stalking—start reading with Anso X-ray films! Anso, A Division of General Aniline & Film Corporation.





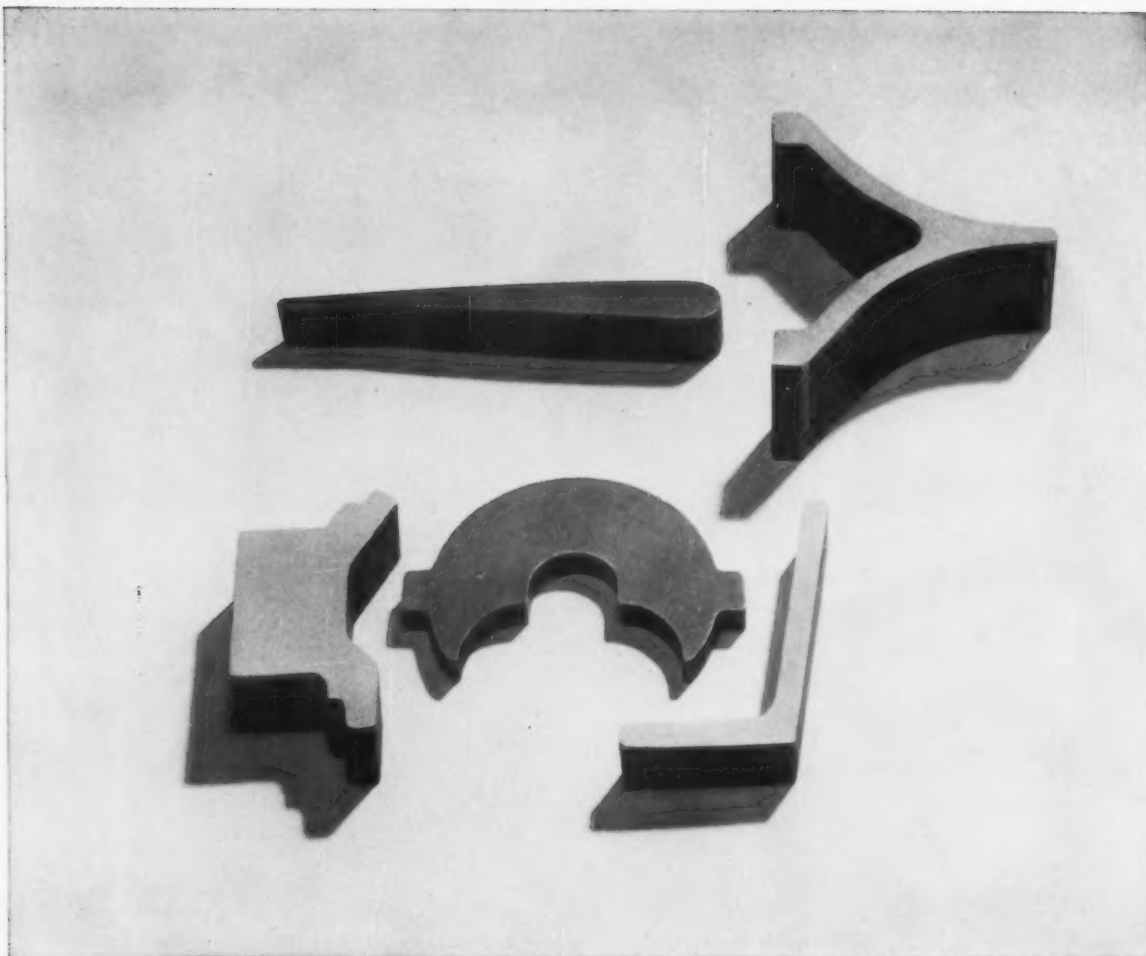
Lindberg pioneers in High Frequency Heating

Along with its pioneering in all phases of "heat for industry" Lindberg is one of the largest makers of High Frequency heating units. Our "H-F" designers and engineers have made outstanding developments in this important heat treating field. For example, we illustrate a remarkable unit just recently completed for aluminizing automotive valves. It was designed vertically, saving 60% of floor space, and is completely automatic. No operator is required. It fits perfectly into an automated production line.

Our High Frequency Division provides units for hardening, brazing, heating for forging and forming, annealing and many other processes, and designs a variety of fixtures for application to "H-F" units. Lindberg also supplies a complete line of motor generators for all induction heating and melting applications. Get in touch with your nearest Lindberg Field Representative (See classified phone book) or write High Frequency Division, Lindberg Engineering Company, 2452 W. Hubbard St., Chicago 12, Illinois.



LINDBERG heat for industry



Intricate Allegheny Ludlum Steel Extrusions **cut material needs up to 60%, slash machining costs**



**Write for this
technical book
on A-L Steel Extrusions**

12-pages of design and engineering information on steel extrusions. Process and product explanation, material properties, design tips and limitations, tolerances, order instructions, etc.

Address Dept. A-1

There's no doubt about extruded shapes saving money on materials and on machining. Non-ferrous applications in the last decade have proven it.

Now even greater savings are possible with tough, strong metals in Allegheny Ludlum Hot Steel Extrusions.

Extruded shapes in all stainless grades, tool steels, carbon steels, electrical steels, high temperature alloys . . . even in zirconium, nickel alloys . . . are now in production at Allegheny Ludlum, cutting costs in many different industries.

If you're hogging out sections, paying for special mill rolls on small orders, or

waiting for minimum rolling mill tonnages, Allegheny Ludlum Steel Extrusions are your answer. They will save you scrap loss, slash your machining costs, hold down your inventory requirements and cut delivery time. Charge for die design is low—under \$200. Orders taken for as little as 40 pounds.

To learn more about the time and cost-cutting possibilities of Allegheny Ludlum Hot Steel Extrusions, send for the technical booklet at the left or call any A-L office for technical assistance.

**Allegheny Ludlum Steel Corporation,
Oliver Bldg., Pittsburgh 22, Pa.**

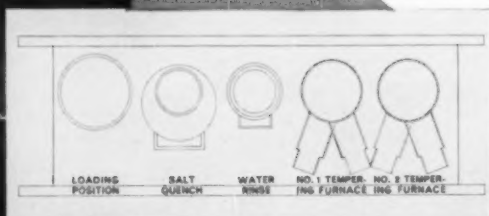
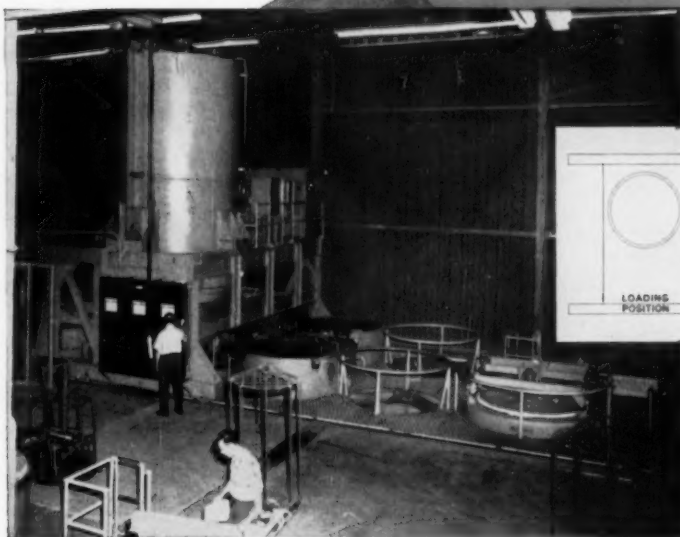
WSW 6907



ALLEGHENY LUDLUM

for all your special steel needs

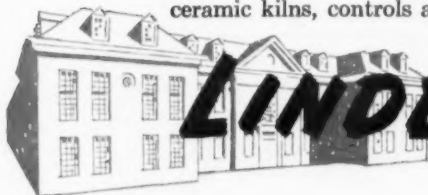
Stainless and high-temperature, electrical and tool steels, magnetic materials, and sintered carbide



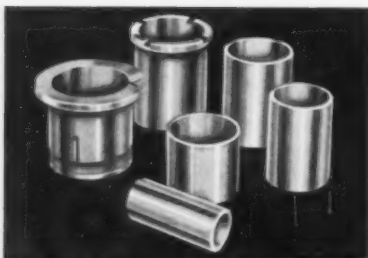
Lindberg applies the creative touch to field-installation

Here is an example of Lindberg's creative touch in field-installed heat treating equipment. Our unique design of this movable overhead furnace saved space, labor and time and increased quality and operating efficiency in missile manufacturing. We have the technical staff and the experienced engineers to design and install for you any requirement you may have for the application of heat to industry. Our service covers all types of heat treating furnaces, aluminum melting and holding furnaces, high frequency units, ceramic kilns, controls and all facilities re-

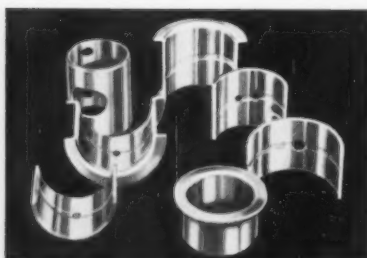
quired to fit this equipment into your production processes. We specialize in "turn-key" operations covering everything from design and engineering to the finished job installed in your own plant. Whatever your industrial heating problem, a good way to solve it is to talk it over with Lindberg. Just get in touch with your local Lindberg Field Representative (See classified phone book) or write Lindberg Industrial Corporation, 2321 West Hubbard St., Chicago 12, Illinois. Los Angeles Plant: 11937 S. Regentview Avenue, at Downey, California.



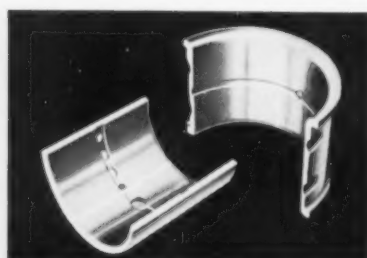
heat for industry



CAST BRONZE



BABBITT AND STEEL



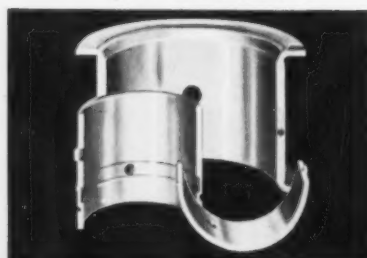
BABBITT AND BRONZE



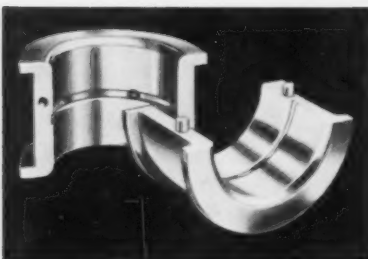
BRONZE OR COPPER-LEAD ON STEEL



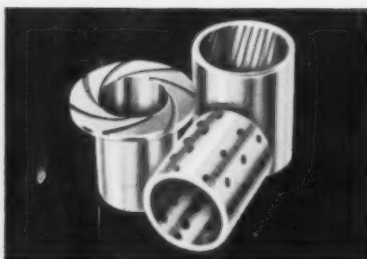
ROLLED BRONZE



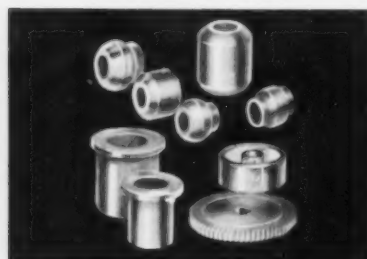
ALUMINUM ON STEEL



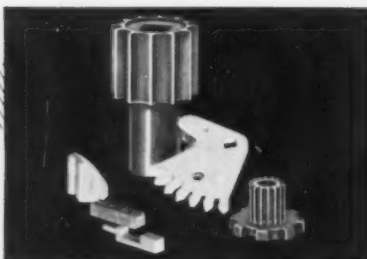
CAST ALUMINUM ALLOY



GRAPHITED BRONZE



LEDALOYL SELF-LUBRICATING



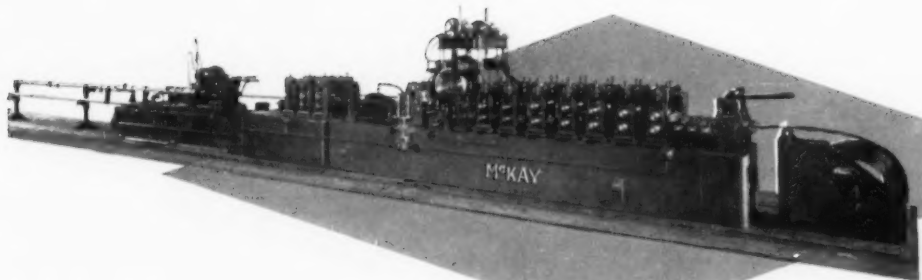
POWDERED IRON

**If Sleeve
Bearings
are your
problem...**

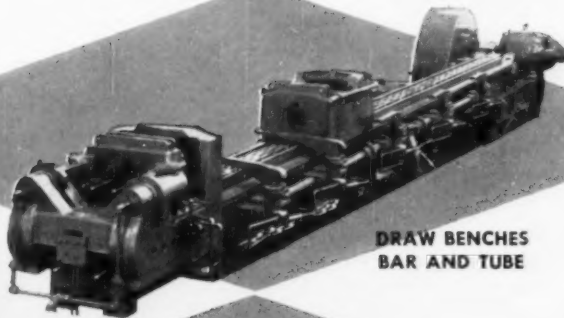


Johnson Bronze can provide the solution. We produce all types of sleeve bearings in a number of standard sizes. In addition, we have the facilities to produce an infinite variety of custom-made bearings to your specifications. The best bearing for any application can be found among the types illustrated above. To get the exact bearing you need at reasonable cost, contact Johnson Bronze Company, 505 S. Mill Street, New Castle, Pa.

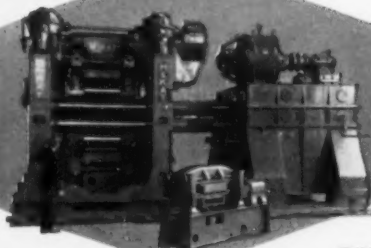
**JOHNSON
Bearings**



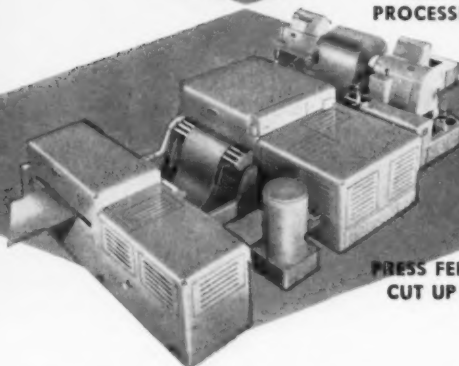
**TUBE MILLS AND
FORMING MACHINES**



**DRAW BENCHES
BAR AND TUBE**



**ROLLER LEVELERS,
PROCESSING MACHINES**



**PRESS FEED AND
CUT UP LINES**

Metal working Automation in action...

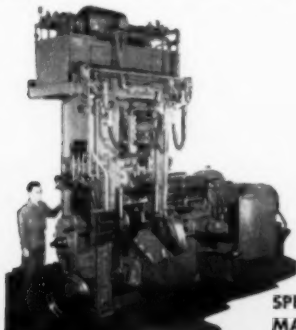
If you're in the metal working business, you should be acquainted with McKay *automated* lines available for many metal working operations.

McKay pioneered and has played a leading

role in the development of such equipment as that pictured on this page.

Basic McKay designs can be modified, or special machines developed to meet specific requirements.

THE MCKAY MACHINE CO., YOUNGSTOWN, OHIO

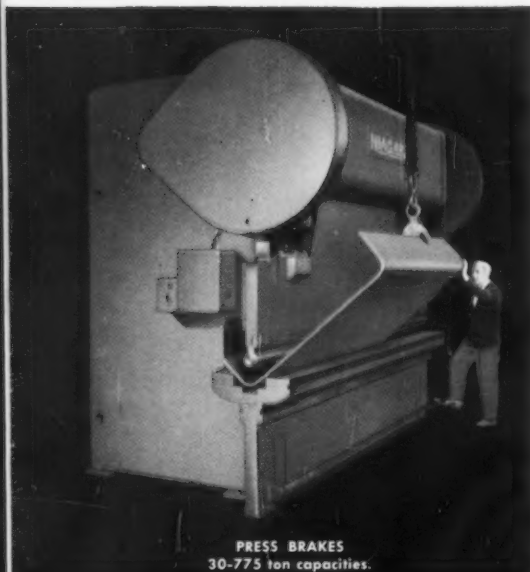


**SPECIAL
MACHINERY**

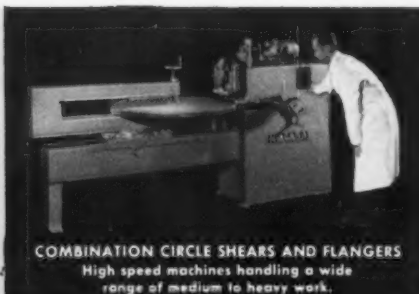
MCK

In plate or sheet metalworking ...

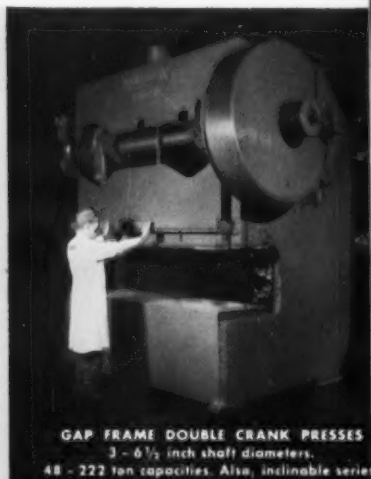
NIAGARA MACHINES CAN



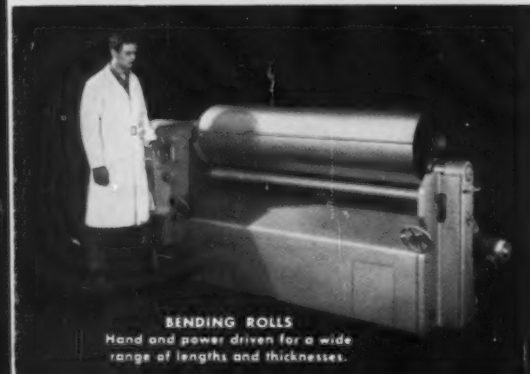
PRESS BRAKES
30-775 ton capacities.



COMBINATION CIRCLE SHEARS AND FLANGERS
High speed machines handling a wide range of medium to heavy work.



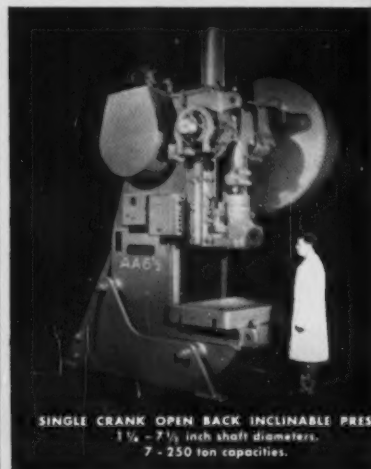
GAP FRAME DOUBLE CRANK PRESSES
3 - 6 1/2 inch shaft diameters.
48 - 222 ton capacities. Also, inclinable series.



BENDING ROLLS
Hand and power driven for a wide range of lengths and thicknesses.



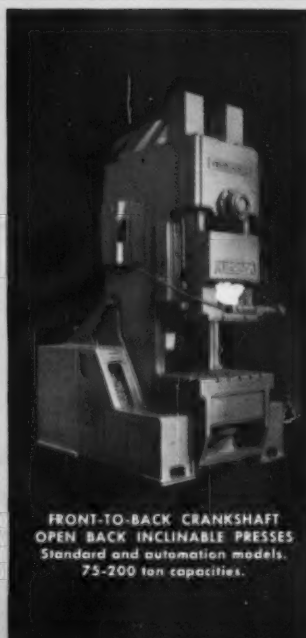
STRAIGHT SIDE SINGLE & DOUBLE CRANK PRESSES
50-400 ton capacities.



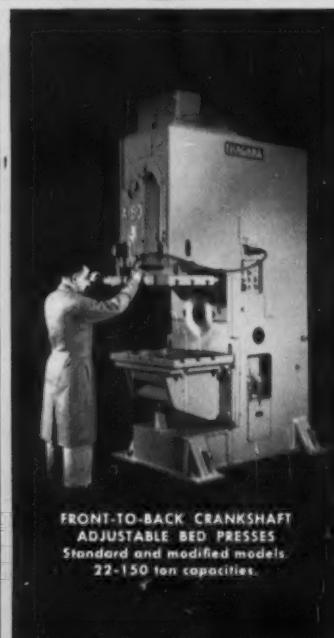
SINGLE CRANK OPEN BACK INCLINABLE PRESS
1 1/4 - 7 1/2 inch shaft diameters.
7 - 250 ton capacities.



STRAIGHT SIDE ECCENTRIC GEARED PRESSES
One, two, and four-point suspension.
100-1000 ton capacities.
Standard and equipped for automation.



**FRONT-TO-BACK CRANKSHAFT
OPEN BACK INCLINABLE PRESSES**
Standard and automation models.
75-200 ton capacities.

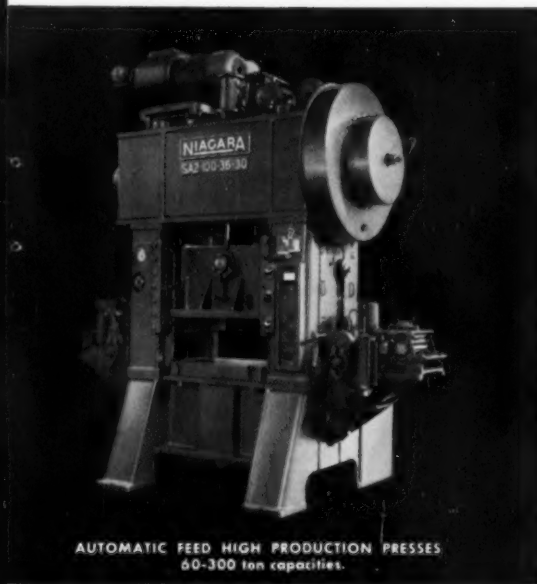


**FRONT-TO-BACK CRANKSHAFT
ADJUSTABLE BED PRESSES**
Standard and modified models.
22-150 ton capacities.

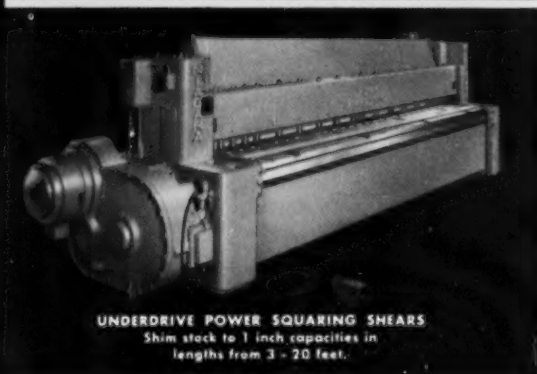


**FRONT-TO-BACK CRANKSHAFT
DEEP THROAT PRESSES**
22-150 ton capacities.

DO THE MOST FOR YOU



AUTOMATIC FEED HIGH PRODUCTION PRESSES
60-300 ton capacities.



UNDERDRIVE POWER SQUARING SHEARS
Shim stock to 1 inch capacities in
lengths from 3 - 20 feet.

NIAGARA

**America's Most Complete Line of Presses,
Shears, Machines and Tools
for Plate and Sheet Metal Work**

**POWER PRESSES • PRESS BRAKES • POWER
SQUARING SHEARS • ROTARY MACHINES •
SLIP ROLL FORMERS • POWER ROTARY SHEARS
• DRUM MAKING EQUIPMENT • ELECTRONIC
AUTOMATIC WELDERS • GROOVERS AND
SEAMERS • HAND OR FOOT OPERATED SHEARS
• FOLDERS-BRAKES • LEVER SHEARS AND
PUNCHES • HAND TOOLS**

* **MOST EXTENSIVE LINE:**

From giant, power-operated machinery to small hand tools

* **MOST ADVANCED DESIGNS:**

Years ahead in performance through forward-thinking engineering

In the world's largest automotive and appliance plants or the smallest of sheet metal shops, Niagara machines and tools are usually at work "in force."

Batteries of giant presses are teamed up with speedy ring and circle shears. Massive, rugged press brakes stand side-by-side with powerful bending rolls and squaring shears. Versatile lever punches, rotary machines, groovers and seamers . . . all operate together to produce a better product at lower cost. The Niagara lines are "companion lines" of metalworking machines and tools that work together. A Niagara-equipped shop or plant is years ahead in quality and volume of production.

Whatever you require—power presses or hand tools—Niagara is the line that can do the most for you. It is the most complete in the industry . . . the most advanced in engineering. You can consult a Niagara representative with complete confidence of unbiased recommendations. Niagara has the right machines and tools for your requirements.

BRING YOUR FILES UP-TO-DATE WITH INFORMATIVE NIAGARA BULLETINS

A diversified and extensive list of machines and tools make up the famous Niagara line. Some of the principal types are illustrated. Be sure that you have the latest data on the ones that apply to your work. At your request, specific Bulletins will be mailed promptly.

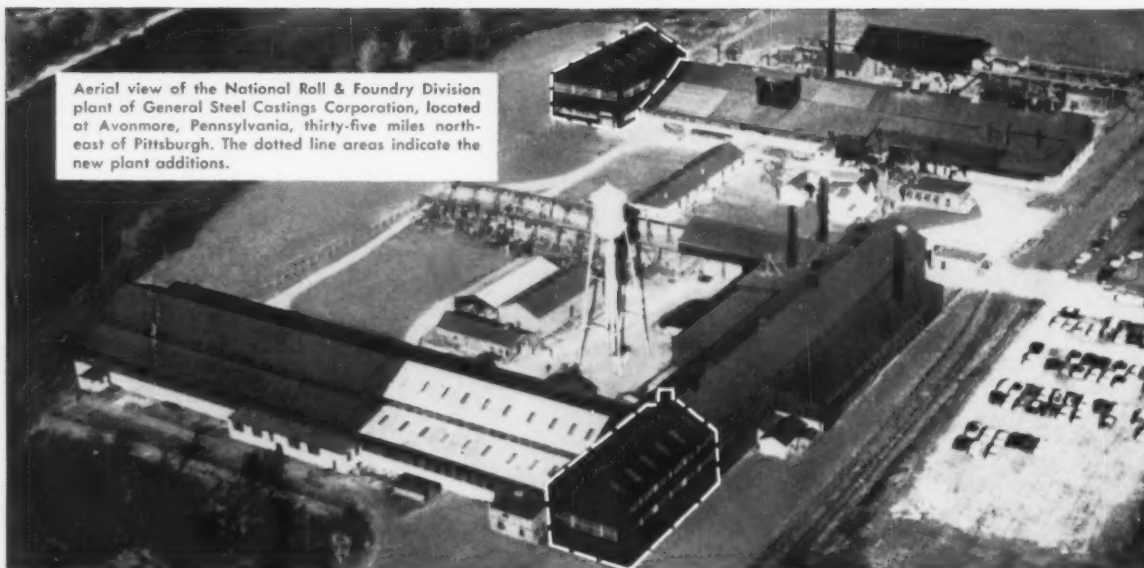


NIAGARA MACHINE & TOOL WORKS • BUFFALO 11, N. Y.

DISTRICT OFFICES

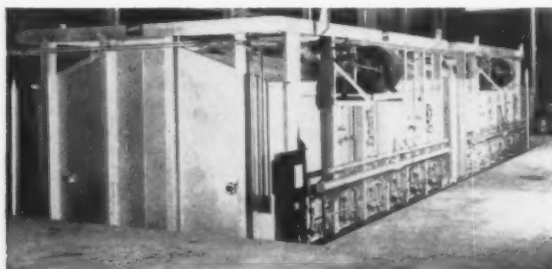
Boston • Buffalo • Cleveland • Detroit • Indianapolis • New York • Philadelphia

Distributors in principal U. S. cities and major foreign countries



Aerial view of the National Roll & Foundry Division plant of General Steel Castings Corporation, located at Avonmore, Pennsylvania, thirty-five miles north-east of Pittsburgh. The dotted line areas indicate the new plant additions.

GENERAL STEEL CASTINGS EXPANDS NATIONAL ROLL & FOUNDRY FACILITIES



New annealing furnaces installed in the addition to the iron foundry. These furnaces are used in the heat treatment of alloy iron rolls.



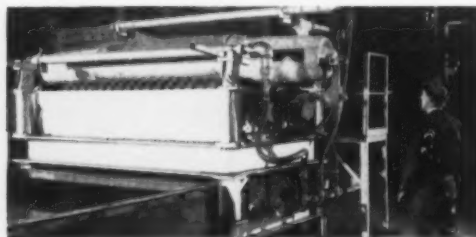
A 60-inch precision-finish grinder, recently installed at National, is the "last word" in grinding equipment. This 60" grinder is one of the largest sizes manufactured for the roll industry.

To keep pace with the ever-growing steel industry, the National Roll Division's plant and equipment have been undergoing an expansion and modernization program that is nearing completion.

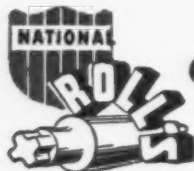
The photographs show four of these additions. There are many others: new pouring pits, furnaces, lathes and testing equipment, etc.

With these new facilities and National's almost half-a-century experience, we are prepared to furnish you the best in iron and steel rolls in a wide range of sizes and shapes for the most exacting rolling mill uses.

Specify National—you'll find they consistently live up to their reputation for long tonnage life, and quality of product.



Quenching machine designed and built by the National Roll & Foundry staff is used for rate control quenching of steel back-up rolls and steel work rolls.



GENERAL STEEL CASTINGS CORPORATION

NATIONAL ROLL & FOUNDRY DIVISION

Avonmore (Westmoreland County) Pennsylvania

General Steel Castings Corporation: General Offices, Granite City, Ill. • Plants: Granite City, Ill.—Eddystone, Pa.—Avonmore, Pa.

Dependable...

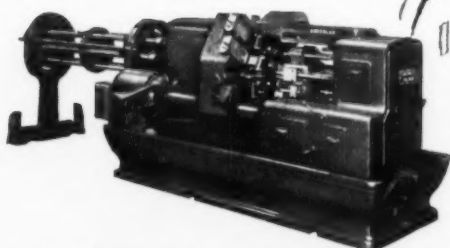


PRODUCTION MACHINERY

GREENLEE



Automatic Bar Machines



SIX AND FOUR-SPINDLE AUTOMATIC BAR MACHINES

GREENLEE Special Machine Tools

- Multiple-Spindle Drilling and Tapping Machines
- Transfer-Type Processing Machines
- Hydro-Borer Precision Boring Machines

BOOST PRODUCTION REDUCE DOWN TIME

It's easy to maintain rigid production schedules . . . prevent costly bottlenecks with Greenlee Bar Automatics. They are always on the job . . . give continuous, reliable service.

You hear much comment about Greenlees' uninterrupted, round-the-clock performance in widely different industries. With good reason, too, for Greenlee offers years of manufacturing experience... plus manufacturing integrity not often duplicated.

Want complete information? Call in the Greenlee man. Let him give you the complete story. Please submit a print when inquiring about a specific job.

WRITE FOR CATALOG No. A-405

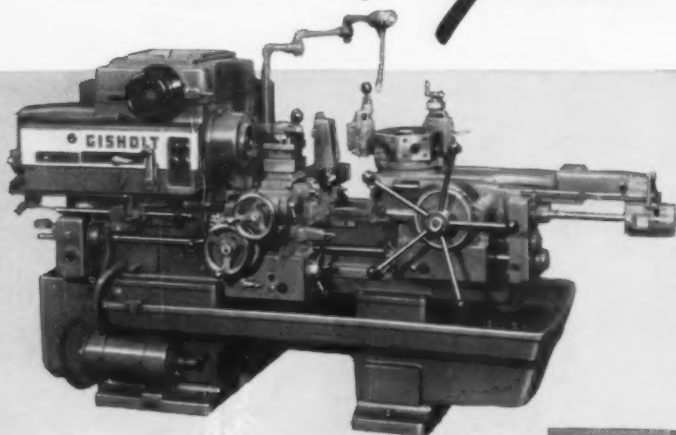
GREENLEE

BROS. & CO.

1801 MASON AVENUE
ROCKFORD, ILLINOIS

for reserve power, speeds and feeds...

SEE THE *Gisholt* MASTERLINE

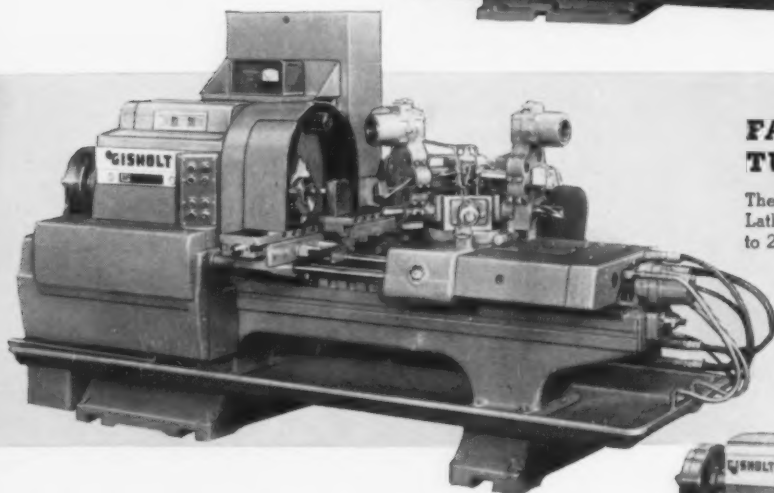
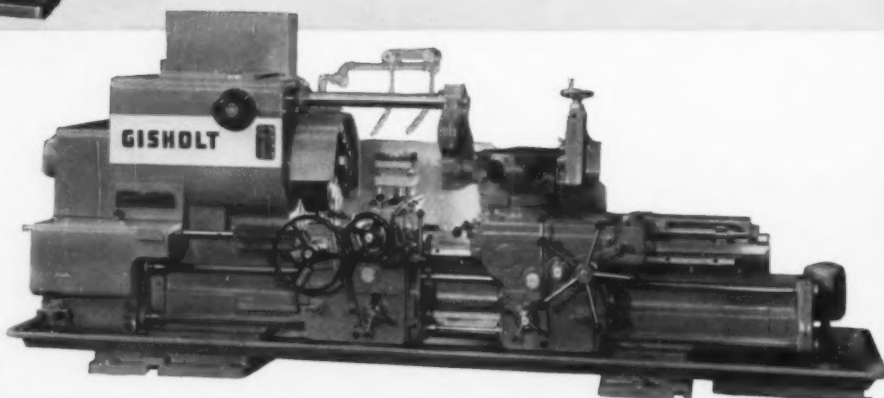


**RAM TYPE
UNIVERSAL
TURRET LATHES**

The No. 3—1½", the No. 4—2", the No. 5—2½" and the No. 5—4½" round collet capacity machines with swing over the ways of 19½" to 21¾".

**HIGH-PRODUCTION
SADDLE TYPE
TURRET LATHES**

The 1L, the 2L, the 3L, the 4L and the 5L for bar work from 2½" to 12½" and with swing over the ways from 19½" to 36½".

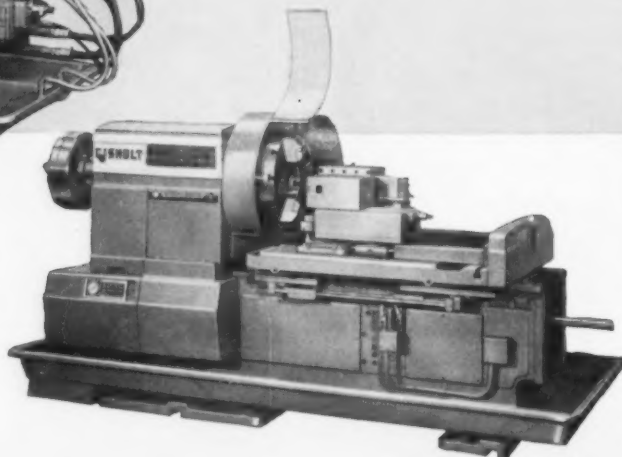


**FASTERMATIC AUTOMATIC
TURRET LATHES**

The 1F and the 2F. Two sizes of Fastermatic Automatic Turret Lathes with swing over the ways ranging from 22¾" to 25¼".

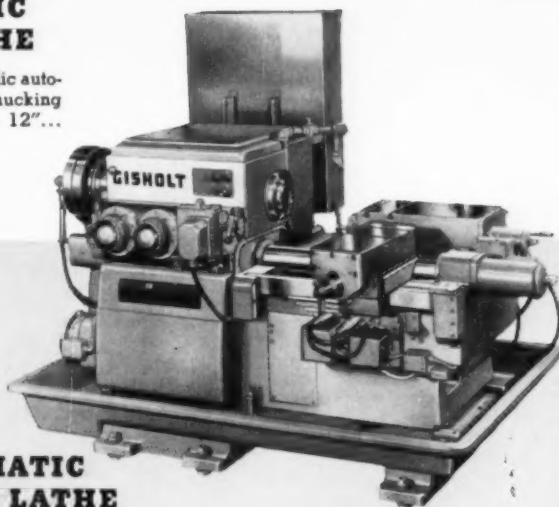
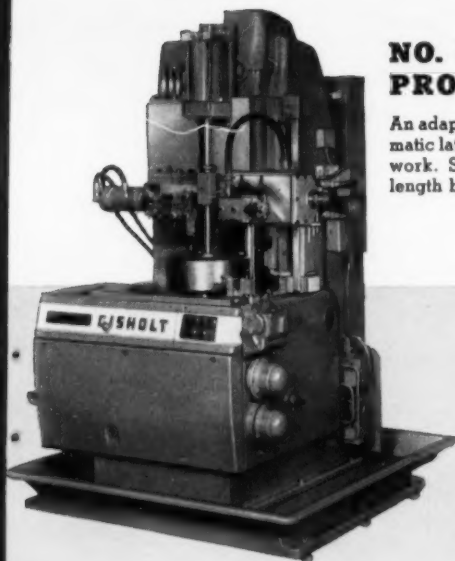
**SIMPLIMATIC
AUTOMATIC LATHE**

A versatile, single-spindle, automatic lathe. Swing over the ways, 36¼"...over table, 25".



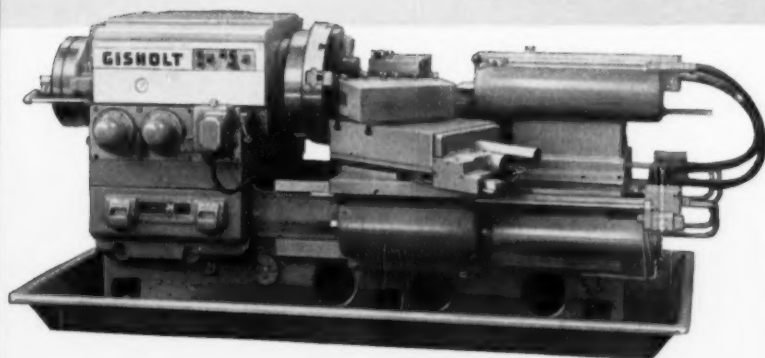
NO. 12V AUTOMATIC PRODUCTION LATHE

An adaptable, single-spindle, hydraulic automatic lathe. For between centers or chucking work. Swing over front carriage, 12"... length between centers, 20".



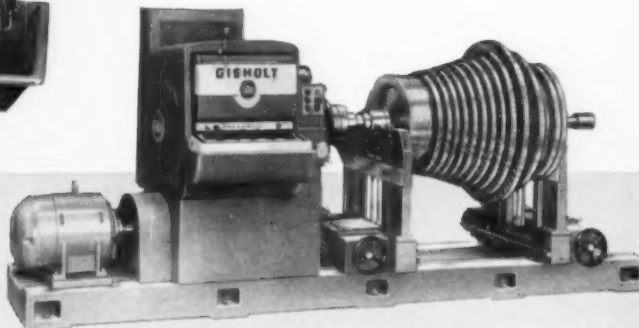
NO. 12 AUTOMATIC PRODUCTION LATHE

A truly modern, single-spindle, automatic lathe. It will handle all classes of work—holding with a chuck or an arbor, with fixtures or with a work driver for between centers. Swing over front carriage, 12"... length between centers, 22".



NO. 24 AUTOMATIC PRODUCTION LATHE

A larger version of the No. 12. For between centers or chucking work, swing over front carriage, 27 1/4"... length between centers, 36".



SUPERFINISHING MACHINES

General-purpose Superfinishers for miscellaneous or production work...Superfinishing attachments for bench and engine lathes...Multiple-Spindle Superfinishers...Plane and Spherical Surface Superfinishers...Crankshaft Superfinishers...special High-Production Superfinishers. Automatic Size Control.

BALANCING MACHINES

There is a Gisholt Dynamic Balancing Machine for rotating parts or assemblies of any size. The Type S DYNETRIC is for parts and assemblies up to 300 lbs. and up to 24" in diameter and length. The Type U DYNETRIC is for parts up to 10,000 lbs. The Floor Type DYNETRIC is for parts up to 150 tons. Portable equipment, Static Balancing Machines, Micro Balancers and completely automatic Dyn-Aut-RoniC Balancing Machines complete the line.

ASK FOR new, condensed General Catalog giving complete specifications on the Gisholt MASTERLINE Machines—or for individual literature on any machine shown. Write Gisholt today!

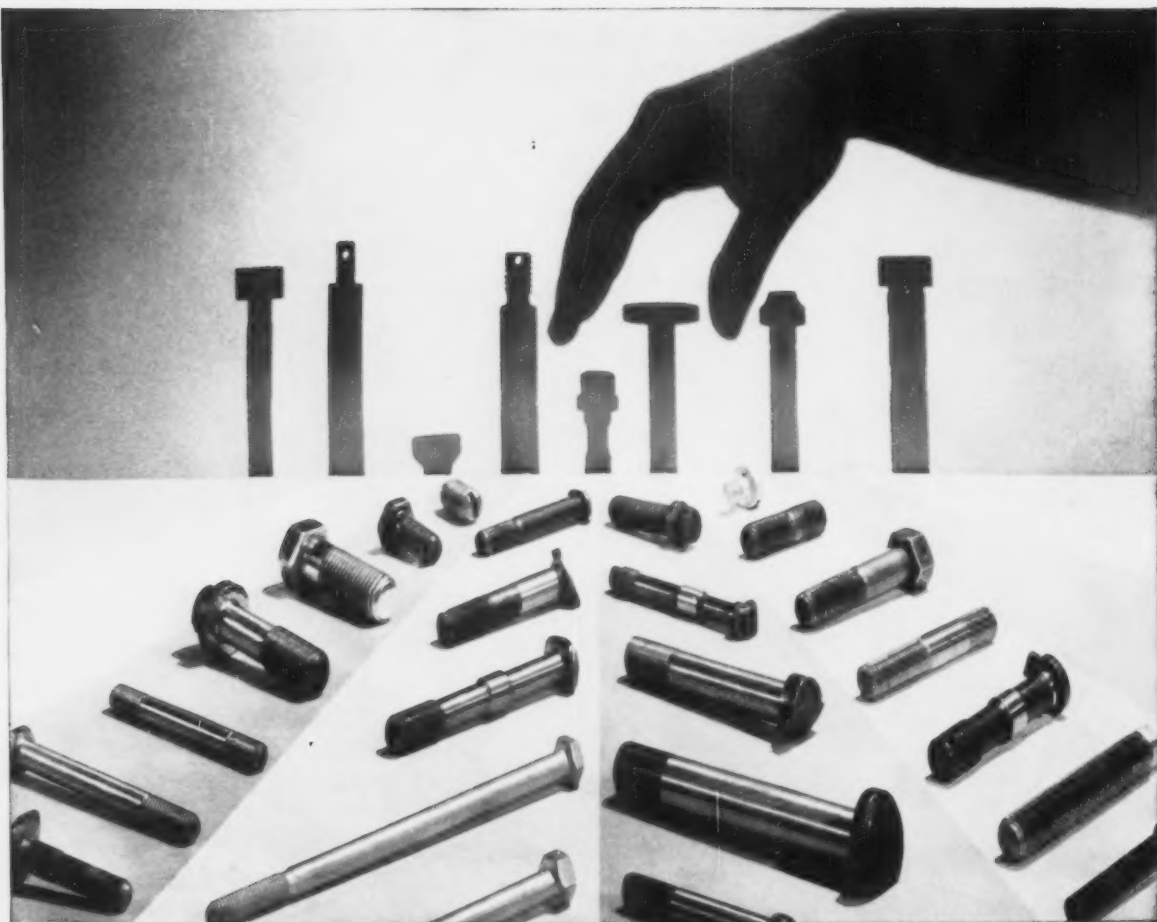


GISHOLT

MACHINE COMPANY

Madison 10, Wisconsin

TURRET LATHES • AUTOMATIC LATHES • SUPERFINISHERS • BALANCERS • PACKAGING MACHINES • MOLDED FIBERGLAS PLASTICS



IMPROVE DESIGN . . . get assistance *from Ferry Cap—fastener experts for 50 years*

Often we can suggest a fastener of special shape that will reduce your over-all product costs. Sometimes these special screws eliminate parts, replace more expensive parts, or reduce assembly time. Frequently they improve product performance. In all

cases, Ferry Cap customers get the benefit.

Give us a call and have a talk with one of our "Fastener Engineers."

THE FERRY CAP & SET SCREW COMPANY

Makers of the famous Countr-Bor® Screw for socket head applications.

2157 SCRANTON ROAD

CLEVELAND 13, OHIO



is geared to FASTER SERVICE



AMBALLOY...A. M. BYERS ELECTRIC FURNACE QUALITY STEEL PRODUCTS

TIMETABLED DELIVERY...SERVICED BY SPECIALISTS

Quality carbon, alloy and stainless steels with the best service in the industry are our guarantee to each customer. We start with a quality product—AMBALLOY steels—then follow up with a firm delivery date that gets your order where you want it, when you want it, fast.

But the Byers service policy extends beyond delivery. High grade production facilities are an important part of

our program. We also offer a personalized technical service through our highly trained corps of metallurgists.

Ninety-three years of producing ferrous metals have familiarized us with many of your problems. So check Byers first for your steel requirements. Write for new catalog. A. M. Byers Company, Clark Building, Pittsburgh 22, Pennsylvania.

A growth company with the emphasis on quality and service **A. M. BYERS COMPANY**

Selector Guide to...

CINCINNATI

MILLING MACHINES CUTTER GRINDERS BROACHING MACHINES

The illustrations and tabulations on these pages will help you in selecting the finest standard machine tools available for milling, cutter grinding and surface broaching operations. You can be confident in your selection of a CINCINNATI®; confident that design and construction are years ahead of the field; confident that size and type are just right for your particular needs. Cincinnati builds over 300 sizes, types and styles of milling machines; 5 cutter and tool grinders; a complete line of vertical and horizontal surface broaching machines. All are briefly described in catalog No. M-1961-1. Ask for a copy, or look in Sweet's Machine Tool File.

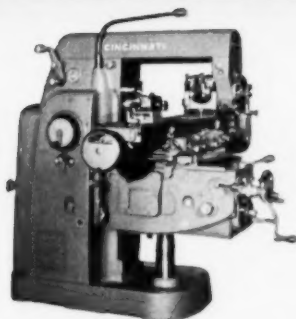
THE CINCINNATI MILLING MACHINE CO.
CINCINNATI 9, OHIO



MILLING MACHINES • BROACHING MACHINES • CUTTER AND TOOL
GRINDERS • SPECIAL MACHINE TOOLS • METAL FORMING MACHINES
HARDENING MACHINES • CUTTING FLUID • GRINDING WHEELS

name, size and style	spindle drive motor, hp.
Toolmaster 1A and 1B 1C	¾ or 1 2
ML, MI 2ML, pl. and univ. 2MI, pl., univ., vert. 3MI, pl. and univ.	3 5 7½
Dial Type No. 2, pl., univ., vert. No. 3, pl., univ., vert. No. 4, pl., univ., vert.	10 15 20
High Power Dial Type No. 2, pl., univ., vert. No. 3, pl., univ., vert. No. 4, pl., univ., vert. No. 5, pl., univ., vert. No. 6, pl. and vert.	15 20 25 25 25
Dual Power Dial Type No. 2, pl., univ., vert. No. 3, pl., univ., vert. No. 4, pl., univ., vert. No. 5, pl. and vert. No. 6, pl. and vert.	20 30 50 50 50
Contourmaster 1A, 1B, 1C	1
Hydro-Tel (several styles of each) 16" Vertical 28" Vertical 30" Vertical 36" Vertical	5 7½ or 10 20 20 to 50
Automatic Profiler 4-Spindle 360 degree	2 ea. pair
000-4 Automatic Unit Type	½ ea. spindle
0-8 Vertical	1
0-8 Automatic Plain; Rise and Fall	1½
1-18 Automatic	3
Powermatic (six ranges of each) Plain Duplex Plain Rise and Fall Duplex Rise and Fall	5, 7½ or 10 5, 7½ or 10 5, 7½ or 10 5, 7½ or 10
HyPowermatic (42 sizes of each) Plain Duplex Plain, tracer controlled Duplex, tracer controlled	7½ to 50 15 to 100 7½ to 50 15 to 100
CINCINNATI CUTTER AND TOOL GRINDING MACHINES Please refer to opposite page	
CINCINNATI HYDRO-BROACH MACHINES Please refer to opposite page	

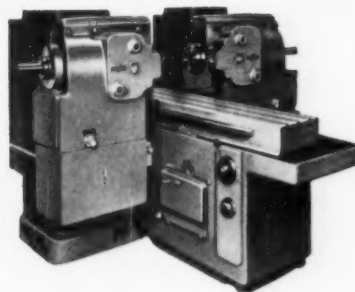
KNEE-TYPE AND MANUFACTURING MILLING MACHINES



CINCINNATI Plain and Universal Milling Machines are equipped with Dynapoise chatter-damping overarms; directional controls; 150 ipm table rapid traverse; automatic backlash eliminator. All plain and universal Dial Types feature power speed and feed selection and complete rear controls. Automatic table cycles are standard equipment on the larger plain machines.



CINCINNATI Vertical Milling Machines incorporate desirable features of the plain and universal styles, and in addition, all are equipped with turret stop and power feed and rapid traverse to the vertical head. Automatic table cycles with single lever manual control are standard equipment on the larger vertical machines.

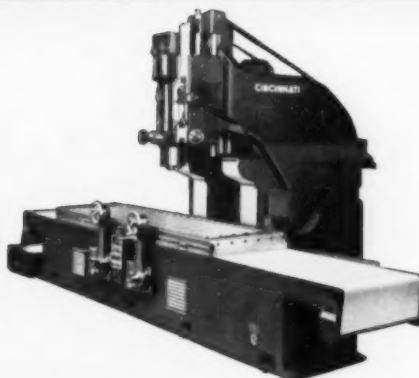


Manufacturing type milling machines built by Cincinnati range from 4" table travel ½ hp, to 168" table travel 100 hp. All have automatic two-way table cycles. Various standard and complementary units for the HyPowermatic line can be combined to gain the production advantage of special machines.

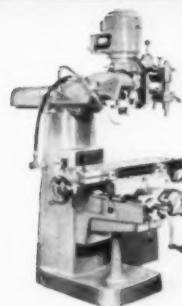
MILLING AND DIE SINKING MACHINES



Automatic rise-and-fall and tracer controlled milling machines are built in many sizes. The O-B Automatic and Powermatic lines are built in "rise and fall" styles, having automatic vertical feed cycles for the spindle carriers. HyPowermatics are built in tracer controlled styles; will accurately follow templates up to 80° rise.

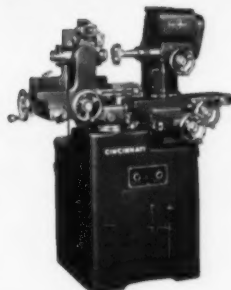


Vertical Hydro-Tel Milling Machines are built in 16", 28", 30" and 36" sizes; and several table travel ranges for the larger sizes. All can be equipped for general-purpose milling, die sinking, and/or automatic 360° profile milling. Die sinking unit is hydraulically actuated; operates with a few ounces pressure.



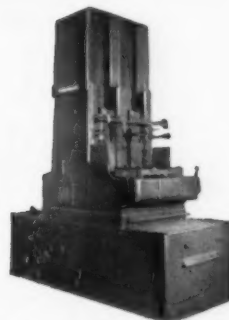
CINCINNATI Contourmaster Milling Machines are the finest equipment available for shops engaged in small to medium sized tool and die work. Plaster or pattern compound masters can be employed. Manually operated table and cross traverse; 16" or 22" table range. Motor driven Shaping Attachment and many other extras available.

CUTTER AND TOOL GRINDERS BROADCHING MACHINES



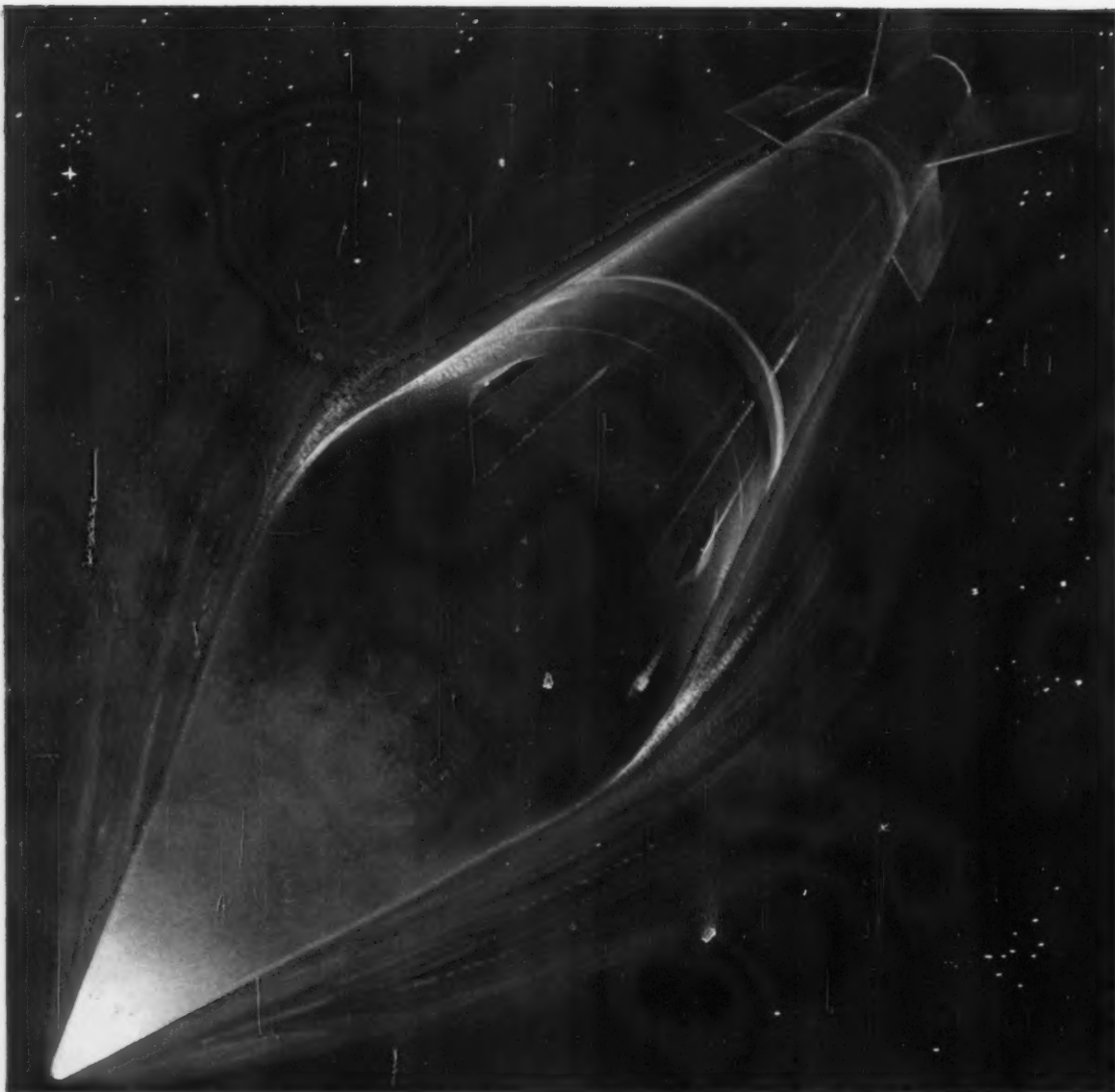
The highest quality cutters are ground on CINCINNATI Cutter and Tool Grinders. There are five in the family, catalogued as to use in the table below:

No. 1	8" swing, 15" between tailstock centers. For grinding a variety of small to medium sized cutters.	Monoset	For grinding and salvaging small to medium sized cutters of unusual shapes.
		Contour	For grinding form milling cutters on the periphery of the cutting edges.
No. 2	10" swing, 27" between tailstock centers. Equipped with FILMATIC spindle bearings. For grinding a variety of medium to large sized cutters.	Projecto-Form	For grinding small form cutters and die parts. Twenty X optical comparison while grinding.



Cincinnati pioneered in many types of surface broadchoning operations, and now builds an extensive standard line of this type of equipment:

Single Ram Vertical... 1 to 25 tons broadchoning force
 Duplex Vertical 1 to 25 tons broadchoning force
 Horizontal One and two direction broadchoning,
 10 to 25 tons broadchoning force



Why it gets hot in there

Closely packed within the thin shell of a guided missile is a mass of electronic equipment. Crowded in so tightly, the tubes and other components scarcely have a chance to dissipate their own intense heat.

In addition, when the missile cuts the air at supersonic speeds, that thin shell builds up screaming heat—enough to wilt metal, to say nothing of the insulations that keep the electronic systems working.

Making electronic insulations that resist this murderous heat is one of the big projects going on today at CDF. A sixty-year reputation for highest-quality insulations makes CDF a major supplier

to the guided-missile field—where half of a multi-billion-dollar budget goes into electronic equipment.

CDF products serve not only the electronic industry but also the aircraft, automotive, communications, and railway fields—in fact, wherever quality mechanical and electrical parts are needed.

Your product may well be improved through the engineering co-operation of CDF experts. CDF sales engineers are always ready to help you make good equipment even better.



CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE *Built* COMPANY • NEWARK 85, DEL.

UNITED[®]



*6 stand continuous horizontal
and vertical Billet Mill*



UNITED ENGINEERING AND FOUNDRY COMPANY

Pittsburgh, Pennsylvania

Plants at PITTSBURGH • VANDERGRIFT • YOUNGSTOWN • CANTON • WILMINGTON

Subsidiaries: ADAMSON UNITED COMPANY, AKRON, OHIO
STEDMAN FOUNDRY AND MACHINE CO., INC., AURORA, INDIANA

*Designers and Builders of Ferrous and
Nonferrous Rolling Mills, Mill Rolls,
Auxiliary Mill and Processing Equip-
ment, Presses and other Heavy Machin-
ery. Manufacturers of Iron, Nodular
Iron and Steel Castings, and Weldments.*



WHAT'S AHEAD... in steel service and supply

New Steels—1958 will peak 1957 by the addition of scores of new sizes and types of steel. Stocked for ready shipment from strategically located Ryerson plants are such new products as:

- **Pre-painted Steel**... cold-rolled coils, in color choices, widths from $\frac{3}{4}$ " to 42", gauges .006" to .035".
- **New Tubing**... hot finished carbon steel in wall thicknesses up to $1\frac{1}{2}$ ", O.D. sizes up to $12\frac{3}{4}$ ".
- **Alloy Rebars**... reinforcing steel with high-yield point for space saving.
- **Alloy Plates**... hot rolled 8620 in 16 sizes, and hot rolled annealed 4140 in 19 sizes, thicknesses up to 5", widths up to 84".

These represent only a sample of the many additions in stock... and coming during 1958.

New Quality Safeguards—Already known for controls that protect you on every purchase, Ryerson is further revising and tightening its quality control pro-

gram across the entire range of products. For example, new closer cutting tolerances are being established; specifications are being reviewed, and all phases of Ryerson service are being more exactly tailored to your needs.

Stepped-Up Service—To meet growing demand, new Ryerson plants have just been opened at Indianapolis and Charlotte... modernization and expansion programs are completed or under way at Los Angeles, Pittsburgh, St. Louis, Buffalo and Spokane.

1958 promises steel users further improvements in Ryerson plants and facilities. Delivery records, such as shipping five out of every six orders within 24 hours, and 60-minute emergency order handling will continue to assure you of getting exactly what you need *when* you need it.

As close as your telephone, you'll find a wider range of steel stocks... controlled high quality... dependable service that goes beyond the material itself. So, as you look ahead into 1958, it will pay you to include Ryerson in your plans.



RYERSON STEEL

Member of the  Steel Family

Principal Products: Carbon, alloy and stainless steel—bars, structurals, plates, sheets, tubing—aluminum, industrial plastics, metalworking machinery, etc.

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Push Aid to Education

The new Congress will find a flock of aid-to-science-education bills in the hopper. Leading scientists are getting behind one plan to give a \$500 scholarship to every high school senior who passes a Federal math test, also a \$500 prize to every college student who passes a calculus test at the end of the freshman year.

More Stainless for Autos

A new booster device for auto heating systems may add 400,000 lb to stainless shipments this year. It brings car engines (and interiors) up to proper temperatures in about one minute. Each unit uses 4 lb of stainless. Expected sales this year: 100,000 units.

Heat Barrier Gets Boost

The search for materials to beat a 2000°F heat barrier is being engulfed by the need—already foreseen—for products that will stand up at 5000°F. Thus, metallurgists and ceramicists have their work cut out for them in 1958, and beyond.

Small-Plant Automation

The automation spotlight will shift a bit more toward medium and smaller plants in 1958. For the near term, at least, the automotive market for transfer equipment seems limited largely to replacement units. But whole areas of metalworking have barely scratched the surface in upgrading their production techniques. Competition will force many firms to take a good look at automation this year.

Big 1958 for Oxygen Steel

Worldwide steelmaking capacity of oxygen converters will top 7 million ingot tons this year. Biggest producer: The U. S., where 12 converters will probably be operating by year's end. Germany, Holland, England and Japan will be going

strong, too. U. S. production of oxygen will exceed immediate demand this year, for the first time since the start of World War II. Newly expanded plants in Calif. and Ohio have just begun to add 150 million cu ft to the monthly supply.

Cannons Still Make Noise

Conventional military hardware is still very much in the defense buying picture. Missile and rocket experts want dollars now earmarked for rifles, cannon, and related items to be switched over to space-age weapons. But top military men insist we need stocks of both old and new armaments.

Defense Costs: Up and Up

Defense spending in the new fiscal year (starting July 1) will eventually push way above the "total" (about \$39.5 billion) to be disclosed in the Administration's new budget. More money will be sought later through supplemental requests. Purpose of not showing the whole hand this month is to present an apparently balanced budget.

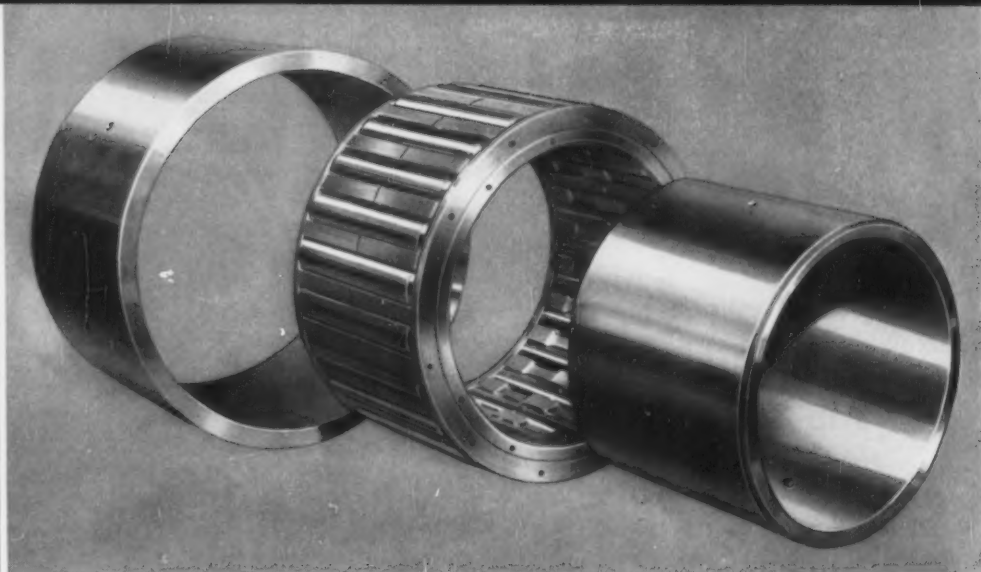
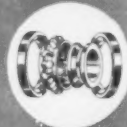
What Next for Motorists?

Are tail fins, quadruple head and backup lights and acres of gleaming trim enough to keep motorists happy? If not, auto tires in rainbow hues could be put on the market in a few months. Tinted tires are said to be an even match for conventional grades in price, strength, and wear resistance.

More Antitrust Activity

Stepped-up antitrust activity this year will center on industries directly affecting consumers. More cases will be filed against producers of consumer goods; against distribution systems; against price fixing. There will be some long looks taken at auto prices and natural gas rates, for example. It's part of a drive to show that the Administration doesn't wear a big-business tag, does strive to keep the cost of living down.

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Messinger bearings are designed to carry heavy loads for the maximum length of service, and to fit into the smallest possible space. The cylindrical roller bearing presents a load-carrying surface squarely opposed to the external load, which is the only way to prevent the internal load from exceeding the external load imposed upon the bearing. This results in simplicity of bearing design and installation, with heaviest capacity possible in a definitely limited space. Another advantage is the opportunity to lengthen the roller to accommodate load capacity without increasing the outside diameter of the bearing.


The use of Messinger heavy capacity bearings having comparatively small outside diameters has made it possible to adapt them to machines not originally designed with roller bearings. This has decided advantages when designing new machinery, as it permits simpler design, smaller diameter housings, conservation of space and total weight, lower manufacturing costs and generally improved efficiency. *Write for literature.*

ILLUSTRATED ABOVE—Messinger Radial Roller Bearing. In either large or small sizes the rugged design and construction of the bronze cages contribute importantly to longer bearing life and service, especially at high speeds.

Smoothing Industry's Pathway  *...for Nearly Half a Century*

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RADIAL, THRUST AND COMBINATION ROLLER BEARINGS • BALL BEARINGS

A black and white photograph of a man in a dark suit and hat, seen from the back and side, looking out of a doorway. The doorway is brightly lit, contrasting with the dark interior. Outside, some industrial equipment is visible. The man's hands are in his pockets.

Are We Heading Into A Prosperous "Recession"?

As 1957 staggered into history the economic climate was none too cheerful. Negative business thinking was growing.

Yet it didn't take an expert to see that January's "recession talk" could easily become June's "boom talk."

■ This could easily turn out to be the most prosperous "recession year" in our history.

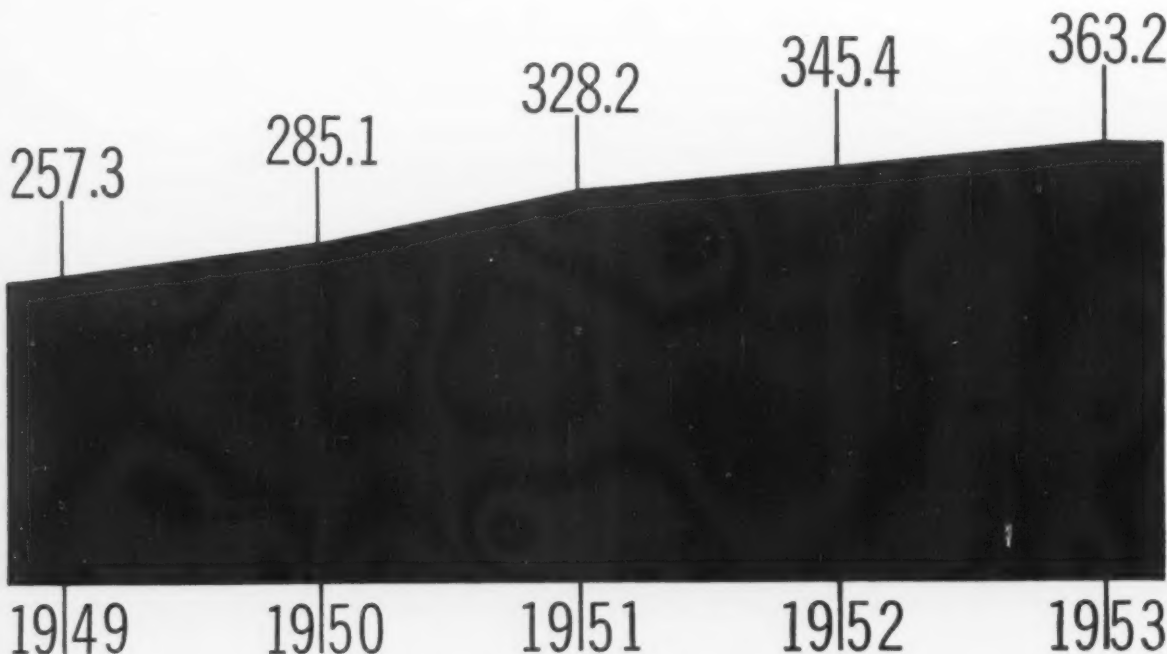
As the year began talk centered mostly on how severe—or mild—the "rolling readjustment" of the economy would be. And there was no question that some of the signs on the economic horizon were any-

thing but reassuring to already-edgy businessmen.

Steel Will Drop — The outlook for steel production called for a drop from last year's 113 million ingot tons to as little as 109 million tons. Some real dyed-in-the-wool pessimists forecast 102 million tons. Other predictions were that indus-

Will Gross National Product

Billions of Dollars



trial and commercial construction would be off. And so would spending for capital equipment.

A well-defined case of "inventoryitis" was sweeping the industrial community. Everybody seemed bent on converting his supplier into a warehouse to be tapped as production needs warranted. The result was a sort of economic chain reaction that pulled industrial production down—and down.

Flashback To '54 — The situation was reminiscent of 1954 when many businessmen decided almost

simultaneously that the economy was going to the dogs. No one wanted to be caught off base when the bottom dropped out.

The 1957-58 chain reaction shows no sign of reversing itself in the near future. At least not in the next few months. And there's a good chance the negative business psychology will last through the first half of the year.

Business Could Boom — Yet a close look at the key pieces in the economic jigsaw puzzle uncovers some seeds that could sprout a real comeback. Even a renewal of the boom and a spurt to new economic heights.

For example: Few of the predictions for individual industries called for a letdown—and at worst no more than a few percentage points. Steel would be off only 3.5 pct. And some industries, including construction, are expected to improve dollarwise.

A Paradox—Oddly enough many of the businessmen predicting a decline in the overall economy said they thought their own companies would fare as well as in 1957 or maybe do a little better.

The situation places a premium on business alertness. It's probably smart to play your economic cards close to the vest. But as an ace-in-the-hole, be set for a quick turnaround should the current trend suddenly reverse itself.

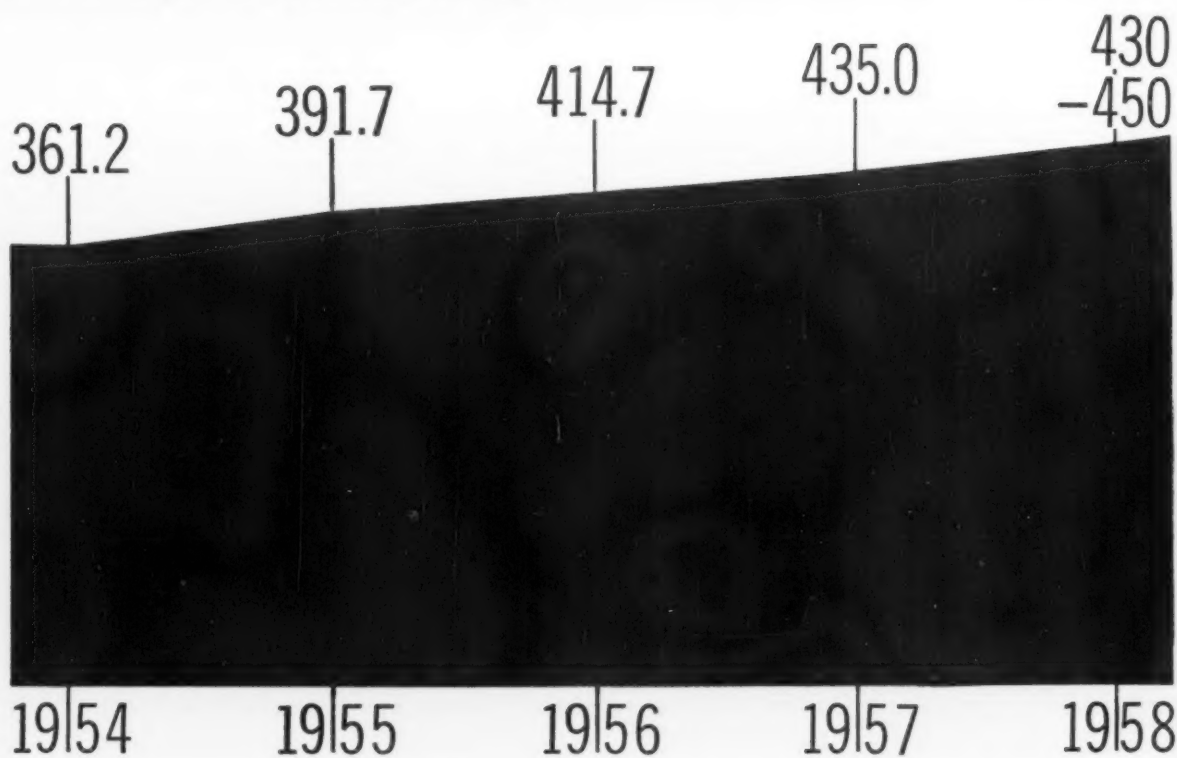
Things To Watch — Here are some things to keep in mind as the year moves along:

Buying Power: Disposable personal income, representing the consumer's ability to pay for goods and services, is still high. Last year it averaged \$297 billion dollars, compared with \$287.2 billion in 1956. It probably will decline during the early months of 1958, but some responsible economists believe it



Keep Climbing?

1957/1958—Estimated



could move up to over \$300 billion before the year is out.

A lot depends, of course, on whether the consumer chooses to sock it away—or, if he spends it, how he spends it. But at the moment he still has it—and chances are he'll spend it, one way or another.

Wages: An IRON AGE survey of 17 major metalworking industries indicates that wage costs will be up about 5 pct over last year. At least that's the consensus of 76 pct of those who responded to the survey. Steel labor will get another raise in July, in addition to a cost-of-living boost this month and possibly another one at mid-year. The auto workers and others will ask for—and probably get—wage boosts.

In addition, most of the major industries have "built-in" stabilizers in their labor contracts. Under these agreements laid-off workers receive as much as 65 pct of their take-home pay through supple-

mentary unemployment benefits and state unemployment compensation.

Capital Spending: While industry is expected to spend less for capital improvements this year, one of the biggest incentives to spend is still around. That's the scheduled increase in labor costs. The combination of higher wages and competition will force many companies to reappraise their position from the standpoint of productive efficiency. This situation could give a shot-in-the-arm to one of the bulwarks of the economy during the last several years.

Gross National Product: Economists are probably more confused than anybody over whether GNP will rise or fall this year. A group of high-level economic advisers to the President say GNP will drop to \$430 billion from 1957's estimated \$435 billion. But other predictions range all the way up to \$460 billion.

The Presidential advisers may be right. But on the other hand their prediction may serve as a goad to the Administration to step up its efforts to put more steam into the economy. Pump-priming in the usual sense may not be in the cards, but there are other ways to turn the trick, such as:

Easier Money: The Federal Reserve Board has done an about-face on its monetary policy. In November it dropped its rediscount rate to member banks from 3.5 pct to 3.0 pct. This has had the effect of encouraging more borrowing by business. Chances are the Board will take further steps, if necessary, to stimulate business borrowing. It's expected also to increase the amount of money available to business for financing inventories and expansion.

Housing: More and easier money would be a boon to home builders and mortgage companies. And early predictions are that housing

Billions
of Dollars

Nation's Ability to Buy— It Stays High

Disposable Personal Income

300

250

200

150

1949

51

53

55

57

1957/1958
—Estimated

starts this year will exceed one million. This could be a modest estimate if contentions of the home-building industry are true. They have argued that thousands of potential home buyers were forced to give up last year because they couldn't get the financing they needed. The money climate this year may give the home builders a chance to prove their arguments.

Construction: The forecasts on construction have emphasized the expected drop in industrial and commercial building. Yet the Dept. of Commerce estimates that over-

all outlays for construction will total \$49.6 billion, compared with an estimated \$47.2 billion last year. Admittedly this increase will be due in part to expected rises in material and labor costs. And some economists don't quite see eye-to-eye with Commerce on the outlook, predicting a somewhat lesser increase or a slight decline. But the differences amount to no more than a per cent or two.

Commerce is banking on residential building, both private and public, and highway construction to more than offset declines in other areas. "This rate of dollar outlay," it says, "would mark 1958 as the second highest year in the physical volume of work put in place (expenditures adjusted for price changes), exceeded only by 1955."

Appliances: The predicted upturn in housing construction will be a spur to appliance sales. Appliance manufacturers recorded a pickup in sales last September after suffering

through a 12-month period of lagging demand. But with some allowance for inflation, assuming that competition does not hold down prices, Westinghouse expects sales this year to almost match those of 1956. This would represent a 4 pct gain over 1957.

Autos: Partly due to price resistance and partly because of the negative economic climate at year's end, Detroit was having little luck wooing potential car buyers. But the situation was far from unhealthy. Dealers did a good job of cleaning up 1957 models. And the new cars, for the most part, were loaded with enticing innovations both mechanically and stylistically. The outlook: about as good as last year, when approximately six million cars were produced.

Defense Spending: The impact of defense spending could be greater this year than at any time since Korea. Another \$3 billion has already been added to the original



budget of \$38 billion for the coming fiscal year. And Washington is under continuing pressure to open up the purse strings even more.

Missile testing and launching bases are being spotted throughout the country. Bases will be set up in friendly West European nations. Missile production is being stepped up. Military aircraft output is being maintained—and will be maintained—until we can see our way clear to meeting the Russian threat in missilery.

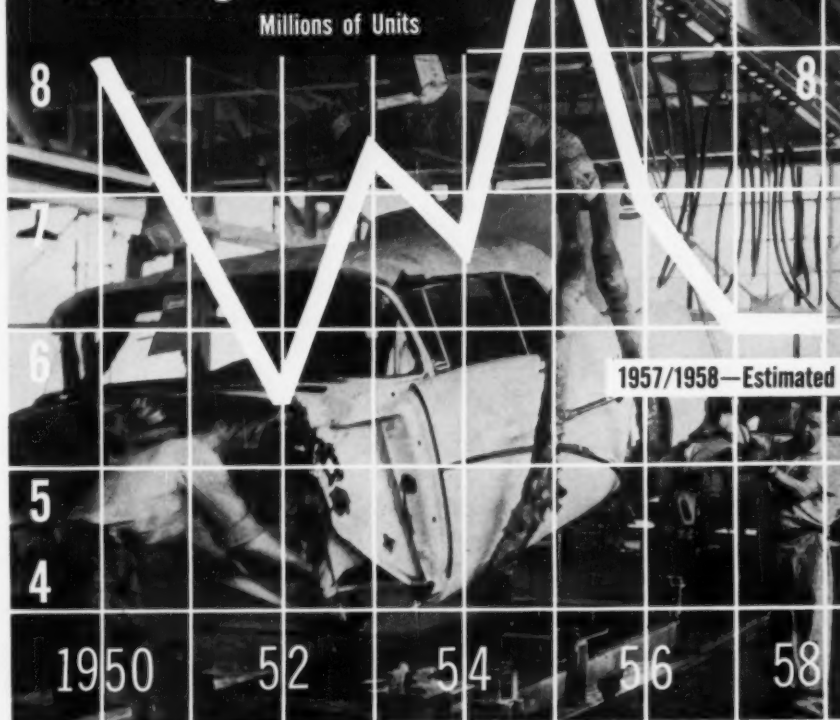
The tempo will increase in the months ahead. The effect on the economy of military outlays for aircraft, missiles, and guns; for combat vehicles; for fuel; for construction; for housing of personnel, and for payrolls should not be underestimated.

Inventory Cutbacks: The economy seems to be weathering the continuing emphasis on inventory reduction in good shape. Even though industrial production was dropping at year-end, the impact merely blunted the nose of the economy. It was not enough to throw it completely off course. Apparently the demand for materials and services was still strong enough to keep the economy moving on a relatively high level.

To many economists this is all to the good. They say it clears the decks of excess production and provides a firm footing for a resumption of the upward movement of the economy. They liken the present situation to 1954, except that it's likely to be a much milder adjustment over the 12-month period. If they're right, 1958 could be the springboard to an even better '59, just as '54 was the prelude to booming '55.

What's Ahead For Steel?—The outlook for steel depends on how far you want to look ahead. The first quarter will be one of the worst in the industry's history. For the year as a whole it won't be so bad. There are quite a few trends

Autos: Will Consumers Loosen Pursestrings?



Housing Starts Are Expected to Rise



Easier Money Can Help

Federal Reserve Board
Discount Rate

Percent



working for the industry that do not appear on the surface.

No one is predicting a bang-up year for steel. In fact most forecasters seem to have settled for around 109 million ingot tons. The IRON AGE is a bit more optimistic, predicting output of 110 to 114 million tons. The year could turn out to be the fourth best in steel's history.

Reason For Hope—Steel is suffering most from the inventory cutbacks of its customers. In most cases these cuts have been sharp and deep—and they have cut across

a broad cross-section of industry. There's no telling how long the reductions will continue. But the very depth of the cuts give steel men some reason to hope that the period of adjustment will be over with that much sooner.

Considering the drab outlook for first quarter, steel executives are looking ahead with real optimism. But they have more than mere hope to go on. Few, if any, of the industries that depend on steel expect to do less business in '58 than they did in '57. In fact the majority of them say they will do better.

Watch Steel Prices — For steel users the outlook is about as good as anyone could hope for. The steel industry not only started the year with falling back-logs and anemic order books—it had boosted its capacity during 1957 from 133.4 million tons to about 140 million tons. From a supply standpoint steel buyers have little or

nothing to worry about for the next 12 months, barring an all-out defense emergency.

Steel prices will be something else again. The chances are they will go up after July 1 when another wage boost goes into effect under the three-year agreement with the United Steel Workers of America. How much prices will go up is problematical. The increase could amount to \$5 per ton, compared with last year's \$6.

Industry Outlook — The steel industry is banking on a pickup in second half to pull it through the year in fair shape. Some even look for the tide to turn after first quarter. It all depends on when the current business caution reverses itself—and on when industry decides to rebuild or hold steady instead of cutting back on inventories.

The industry is not worried about the rate of steel consumption—that is, steel actually chewed up by



Construction: The Boom Rolls On

Billions of Dollars

1957/1958—Estimated



industry. Steel men figure consumption in 1958 will approach last year's record 83-84 million finished tons. What does worry them is how much of this steel use will come from their customers' inventories.

No Incentive To Rebuild—

Actually, steel users will have little incentive in the early months of the year to reverse their inventory-cutting policies. They are assured of another year of industrial peace in steel. And they can afford to slim their stocks until they see which way the economic wind is blowing.

Later in 1958 it could be a different story. At the least, steel users could begin ordering steel in line with their production requirements. This alone would give steel output a boost in the right direction.

Product Picture — The outlook for supply of individual steel products is uniformly bright. And

this includes heavy plate, structurals, and oil country goods. Even linepipe supply is improving somewhat, due not so much to lack of proposed pipeline projects as to delays in obtaining project approvals from the Federal Power Commission. In addition, a proposed increase in tariff on U. S. pipe going into Canada threatens more problems for linepipe producers.

But just to keep you from becoming overconfident, here's a word of warning from B. E. Estes, economists for U. S. Steel Corp.:

"I am hopeful that American businessmen have learned the dangers of excessive inventory reduction. I can illustrate the problem by describing recent steel industry experience.

It Happened In '54 — "During 1954, steel buyers cut more than 7 million tons of steel out of inventories. Then, business began to show signs of revival in late 1954;

and steel users suddenly found themselves with inadequate supplies of steel on hand.

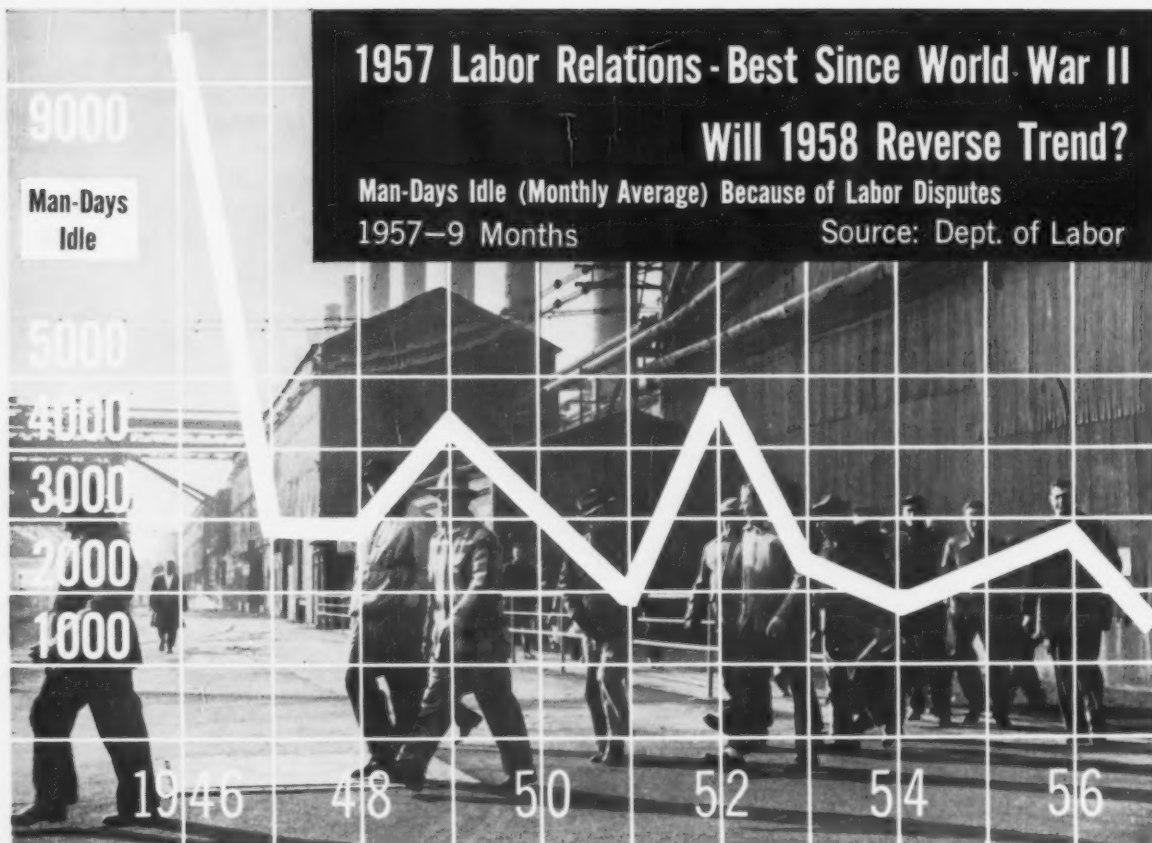
"The steel industry could readily supply the increase in consumption requirements, but concurrent with this increase in usage was the desire by consumers to replenish depleted steel stocks. The result was that many customers found themselves unable to get the sizes and kinds of steel they needed when they wanted it."

Aluminum Outlook—The aluminum industry is looking for an increase in domestic consumption this year over 1957. Among the more knowledgeable forecasts is one that shipments to aluminum users apart from deliveries to the defense stockpile should range between 2.0 and 2.1 million tons. This would compare with consumption of slightly under 2 million tons in '57.

Aluminum people are looking for increased use of aluminum this year in automotive, homebuilding, nonresidential construction, road-building, small boats, food packaging and canning. In aircraft, the industry expects a continuing good market despite the rising "heat barrier" due to increased speeds of modern planes and missiles.

Capacity Will Be Up—On the other hand, total supply of aluminum from domestic and foreign sources is expected to be about 2,700,000 tons, up 17 pct from 1957's approximately 2,300,000 tons. The 1958 capacity will be broken down about as follows: Primary production, about 1.9 million tons, up 15 pct; primary imports, over 285,000 tons, up 42.5 pct; recovery of secondary aluminum from scrap, about 500,000 tons, up nearly 14 pct.

Even though last year's aluminum shipments were 3-4 pct below those of 1956, the industry was encouraged by two factors indicating the overall growth aspects of the metal: (1) New applications which nearly offset the drop in shipments to major markets, and (2)



the increase in per-unit use in some cases more than offset the decline in production of total units.

Copper Depressed—In copper, the outlook was none too cheerful. Producers were faced with the prospect of further cutbacks in output unless demand picks up.

And the big problem with trying to cut production is where to begin. African producers have announced their intention of doing so, but little of this comes into the U. S. market. Chile is fighting against cutbacks, although at year

end there were signs that she might give in.

U. S. subsidiaries in Chile cannot cut production without the Chilean government's cooperation. They are taxed on their output. And any major cut would mean that much less revenue for the Chileans—and to boot the curtailed production would be taxed at a higher rate.

U. S. mines have cut back somewhat. But producers hesitate to overdo it because many mines are located in out-of-the-way places. Once a man is let go he drifts off to other work and it's difficult to lure him back. Action thus far has been more in the nature of reducing the work-week.

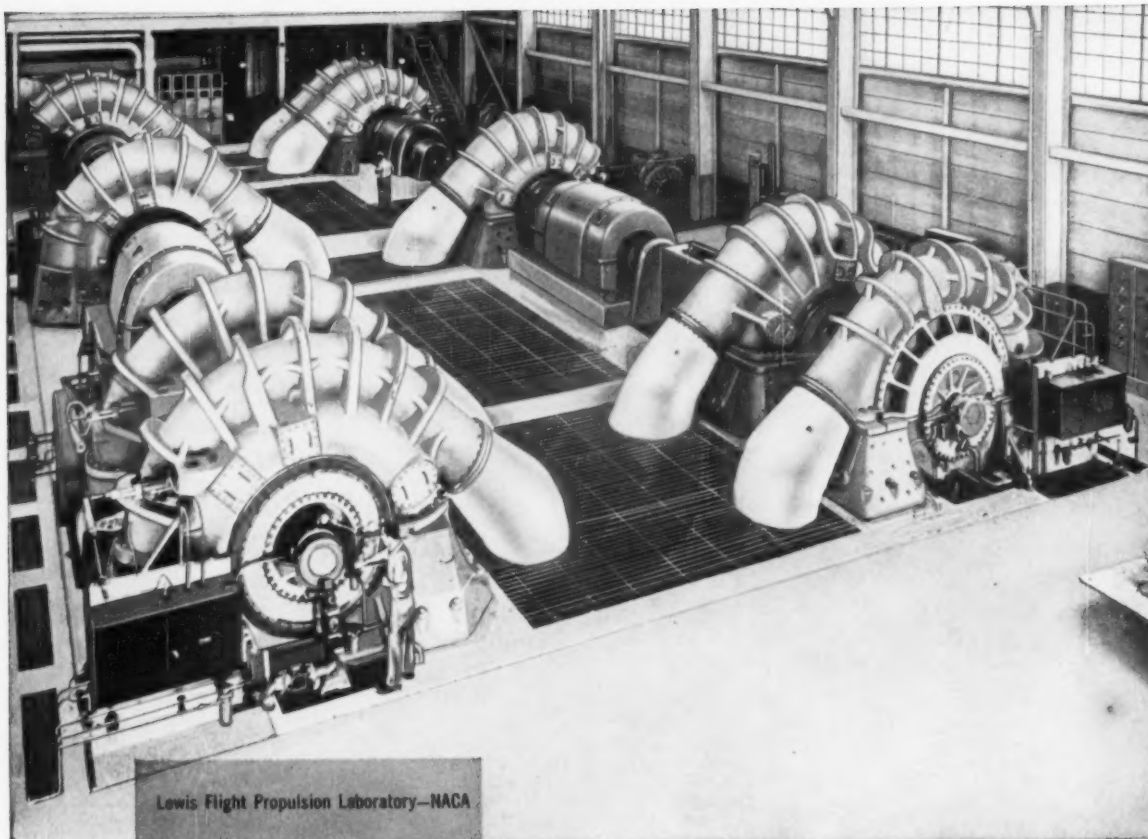
Copper users' inventories are low. The copper mills can make immediate delivery and were doing so as the year began. Opinion in the industry is that users will continue to keep inventories low until a business pickup forces them to reverse course.

Lower copper prices have hit industry earnings, even though some major companies say they sold almost as much in '57 as in 1956. Copper from producers was selling for about 27¢ per lb, and from custom smelters at 25½¢ per lb, compared with 36¢ and 35.5¢ per lb, respectively, at the same time last year.

Could Get Better—A ray of optimism comes from Roy H. Glover, chairman, Anaconda Co. He says much of 1957 was an "adjustment period" in which copper shipped was only 80 pct of consumption. He believes a period of better balance and a stronger price picture is just around the corner.

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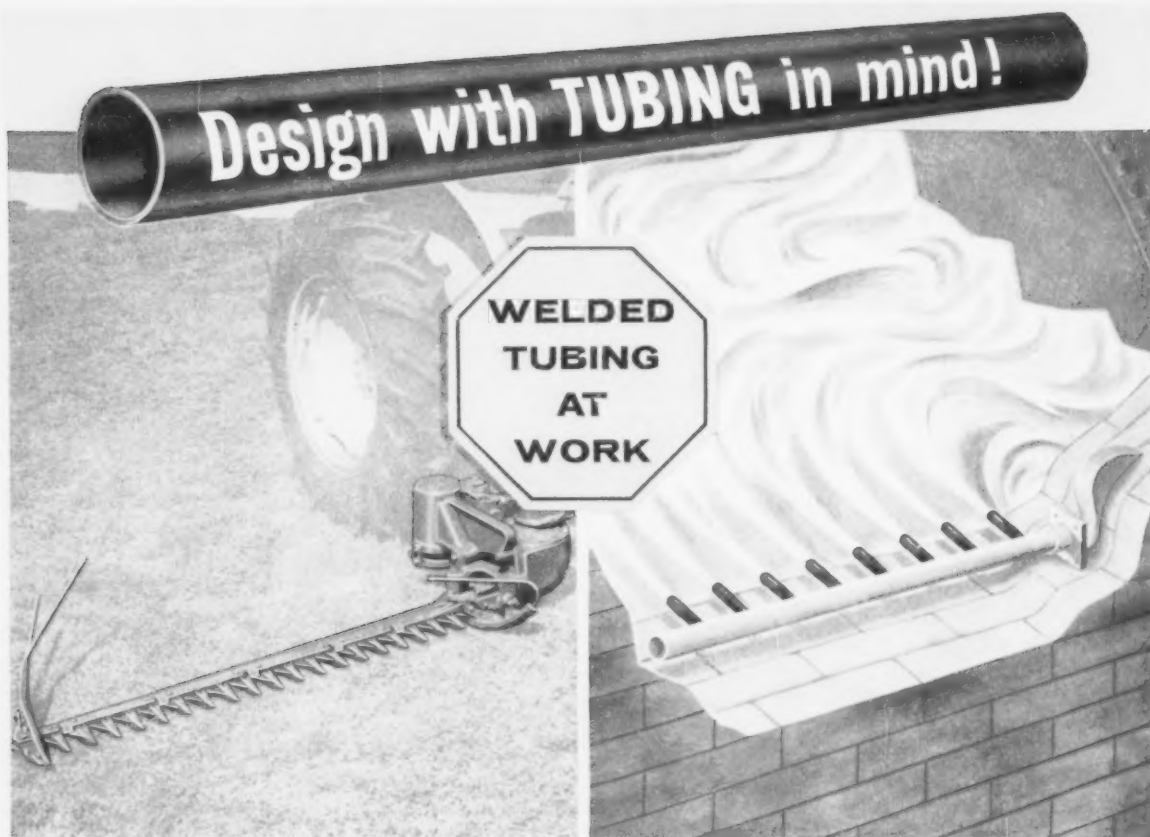


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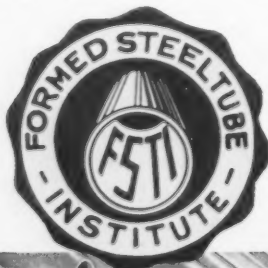
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Norman L. Mochel

Spokesman for Product Identity

Materials labeled according to specification impart confidence to the user, says Mr. Mochel.

They not only offer production advantages but are becoming a vital necessity as technology advances.

■ Ask Norman L. Mochel the question "What's in a name?" and you will probably get the reply: "Plenty."

Identification of materials is a major problem that warrants the full attention of industry, he contends. Keeping parts and products properly marked not only speeds up material handling, assembly, production, and repair, it is a matter of good housekeeping and safety.

"As the atomic age comes in, and more dangers are present," he says, "then for self protection, people will have to pay more attention to this matter of identification."

Specifications Champion — This advice is more than just a spur-of-the-moment offering, to be spoken, heard, and then forgotten. Mr. Mochel, who is manager of metallurgical engineering at Westinghouse Electric Corp., Lester Branch, has been carrying a torch for better specifications for at least 35 years.

He is one of the men behind the American Society for Testing Materials' never-ending quest in this area. Since 1920, he has served on many standing committees and many special committees in ASTM. Probably the most outstanding was a stint as chairman of Committee A-1 on steel for 15 years from 1938 to 1953. He was president



NORMAN L. MOCHEL: He who creates shall identify.

of the organization from 1954-55, and is currently a director.

No Easy Way — "Identification markings or methods will vary in many ways, depending upon the nature of the thing," he says. "To identify or not identify is the first question. It is easy to identify some things: it is very difficult to identify others."


But, he continues, the difficulty of doing it must not be accepted as the reason for not doing it. The matter of cost will also vary, which brings in a matter of values.

Varied Services—In a long and distinguished career, Mr. Mochel has made a name in many other technical organizations, in government, and in his community, Ridley

Park, Pa. Aside from conventional engineering and metallurgical tasks, he has been called on for assistance in some offbeat engineering jobs.

These include serving on a committee to study the safety of huge William Penn statue perched atop Philadelphia's city hall, and supervision of welding and materials selection for the giant telescope at Mt. Palomar.

Distinguished Company — A native of Pittsburgh, Mr. Mochel has worked his entire life for Westinghouse. His interest in metal-working he attributes to a high school professor who taught a course in "Local Industries." He was trained on the job by many big men in Westinghouse corporate history.



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Don't Sell Too Short This Year

If you look back to 1954, very few executives recognized the end of the recession and the start of the boom.

It will be just as important this year to recognize the end of the current decline. Don't be caught retrenching when the upward trend starts.

■ The best advice to management at this point: Don't miss the end of the present downtrend.

There's no doubt whatever that a mild recession is in the works. In fact, it has been in progress since late August. The end is not immediately in sight and is not likely

to come while the present combination of circumstances exists.

Behind the Decline—Today's business troubles stem from these three basic factors:

1. The capital goods boom that has lasted for nearly three years is on the wane.

2. There has been no upsurge in consumer buying, particularly of durable goods, to compensate.

3. In view of these factors, industry itself is hell-bent on an economy kick that only aggravates the situation. This is particularly evident in inventory control, but extends to general cost-cutting wherever possible (often to the ridiculous).

Like 1954—In general, the situa-

tion resembles the start of 1954. Now, as then, the economic peak was reached the previous summer and the sharp downtrend followed. In 1954, the bottom was reached in the summer, although very few businessmen are on the record as recognizing it.

In fact, many kept right on retrenching after the 1955 boom was well under way. An amazing number, none of whom will admit it now, refused to recognize the boom until mid-1955.

Maybe it wasn't too late to profit from it even then, but the late comers lost out on many of the advantages that always accrue to those in at the start.

The Missile Program Could Make the Difference

Look for the Upturn—Your main problem now is how to recognize the end of the recession. Unfortunately, there's no formula for it and, although the economists will argue it, there's no substitute for intuition.

Of course, the major industries recognize the overall expanding of the economy and continue to plan for it. But even these aren't standing pat and waiting out the cycle. They are improving their products and spending heavily on research for new ones.

Things to Look For—But sticking strictly to trends for the moment, there are a few important things to watch.

One of the most significant is home building. There are some mild indications that a boomlet is on the way. Easier money will help some.

Spending Patterns—Any and all trends in consumer spending are important. In recent years, the trend has been away from durables to non-durables and services. A reversal could be most important.

Don't neglect capital goods spending just because of a general downtrend. Outlays in the third and fourth quarters were actually greater than predicted.

A Missile Economy?—But most significant of all in this crucial year is defense, particularly missiles.

Unfortunately, metalworking will get little concrete benefit this year. Most missile activity will stay in the research and development program for some time to come. And those large missiles that are in or near the production stage will not result in the mass production that is associated with metalworking.

Some Gain Already—But you may have noticed recently that one of the largest companies predicted a better year in 1958, largely because of its missile activity. And this company is only a subcontractor, although deep in the missile program.

Even if the missile program does not generate a metalworking boom in itself, the missile is now a fact of life, and you will have to learn to live with it.

There is no easy way to get into the missile effort. You may have to gain the secondary benefits of those added billions of dollars being pumped into the economy.

In a way, the missile may be symbolic of the entire year you are now entering. Many of the old rules are being thrown out. New ones are coming in. It will be a major period of transition in business.

Eventful Year for Automakers

Individual Styling Makes Its Mark

Ford made the big news with (1) new Edsel, and (2) Ford car took sales leadership away from Chevrolet.

Chrysler sales soared, GM dropped off slightly.

Independents score with economy models.—By H. R. Neal.

■ At the end of 1957, automakers were keeping one eye on the sky and the other on the ground. The year began with the nation's interest centered on "winged" land vehicles, and closed with attention diverted to

wingless space vehicles.

Looking back over the year, a number of events stand out. Without question, it was a year in which styling was the greatest factor in the market. It marked the first time automakers offered an individual styling philosophy that could be identified with a company. General Motors styling was characterized by a rectangle, Ford's by a trapezoid and Chrysler by a wedge.

Ford Made News—Ford Motor Co. undoubtedly made the biggest industry news on several fronts. The firm introduced its controversially

styled Edsel. Characterized by a distinctive vertical grille and gull-wing taillights, Edsel was launched with one of the industry's biggest publicity splashes. To date, it has caused little more than a ripple of interest in the sea of car buyers. Near the year's end an Edsel executive commented: "We are where we expected to be—but not where we hoped to be."

Ford division entered the year with a completely restyled product, sporting modified wings to pit against industry leader and arch rival Chevrolet's face-lifted offering. When the last automobile sales slip of 1957 is counted, in mid-February, Ford will emerge as the official new king of sales. It is the first time since 1935 Ford has been able to wrest undisputed possession of the coveted crown from Chevrolet. But Chevrolet still managed to carry off the production championship.

Chrysler Sales Soared—Sleek imaginative styling sent Chrysler Corp. sales and profits soaring. High flying fins marked the complete Chrysler line. Extensive engineering changes also helped sell the cars to a sports-minded public. Torsion bars replaced conventional front suspension coil springs in the first complete suspension change since the switch to coil springs.

Complete restyling of General Motors' top lines of cars was not complete enough. In addition to Chevrolet's defeat, Buick was dumped from its third place ranking in the industry by Plymouth.

Rough Road—The independents found the going rough. American Motors Corp. bobbed along early in the year. Rambler sales improved, but not enough to offset the



STARTING POINT: This Ford Motor Co. designer makes hundreds of sketches in his search for the right styling combination that will maintain the sales leadership Ford took from Chevrolet in 1957.

ECONOMIC FACTS ON FASTENERS



COMMON SENSE SIMPLIFICATION CUTS INVENTORY

● Reduce fastener inventory by simplifying usage requirements

● Lower your stock handling and purchasing costs, too

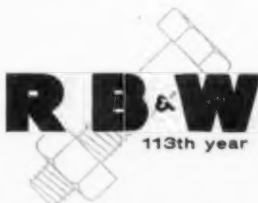
To take full economic advantage of "standard" fasteners, standardize their *usage*, too. The fewer types and sizes you can get along with, the lower your buying, stock handling and even assembly costs will be.

Case history: At one plant, the man tackling the job found more than 23,000 fastener items in inventory. Without need to consult anyone, he eliminated 1700 items immediately. With study, he figures to cut the rest in half.

Some suggestions: (1) Stock *only* one pattern of nut, not two or more, for each size bolt. (2) Use coarse threads almost exclusively; fine threads are seldom necessary. (3) Eliminate as many bolt lengths and diameters as feasible. Change a minor specification rather than add an in-between size. (4) Settle on

fewer materials. Two grades of steel satisfy most strength needs. (5) Specify fewer head styles for bolts and screws.

Much simplification can be done by common sense alone; much *more* with the help of a fastener engineer. Ask the RB&W Fastener Man to show you. Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, New York.



Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. **Additional sales offices at:** Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. **Sales agents at:** Milwaukee; New Orleans; Denver; Fargo. **Distributors from coast to coast.**



Staked acorn nuts lock securely

Staking opposite sides of these RB&W acorn nuts deforms threads for a positive grip. It also puts middle of nut slightly out-of-round, for a spring tension locking effect. They're designed for applications such as outdoor furniture, where anchoring fasteners is more important than solid seating. Available in aluminum, steel, silicon bronze.

These all-metal nuts can also be furnished in double chamfered style. Since they lock with their middle threads, they can be turned onto screw from *either* side.



Tapping screws that lock into place

RB&W offers tapping screws with Spin-Lock® design. Hardened teeth on periphery of head lock into seat when screw is tightened. They resist backing off from vibration or thermal expansion and contraction.

In one case, continual heating and cooling had caused handle screws on certain flatirons to loosen. Every type tried failed to stay tight under these conditions, until RB&W's unique Spin-Lock tapping screws were installed. That did it.

Spin-Lock screws are available with flat heads or hex heads, and are reusable. Send for bulletin.

RB&W FASTENERS—STRONG POINT OF ANY ASSEMBLY



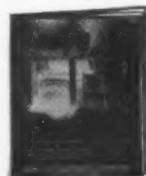
INDUSTRY'S FIRST OXYGEN CONVERTERS fabricated by Pennsylvania Engineering Corporation

The first top blown oxygen steel converters in the United States were fabricated by PECor for McLouth Steel Corporation. Completely assembled, aligned and operated in our shops before shipment, they feature greatly increased efficiency in the tilting mechanism and drives, precision cut gearing, anti-friction bearings and rugged, extra heavy-duty design throughout.

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ferrous smelting or refining, handling of hot metal, slag, cinders or other metal production operations, depend on PECor—a new symbol for Pennsylvania Engineering Corporation's more than 75 years of experience in engineering and building top-quality equipment for the metal producing industries.

WRITE for complete PECor catalog.



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OTHER STEEL PLANT EQUIPMENT WE BUILD

Blast Furnaces . . . Open Hearth Furnaces . . . Hot Metal Mixers . . . Hot Metal Mixer Cars . . . Ladles . . . Ladle Transfer Cars . . . Scrap Cars . . . Slag Cars . . . Ore Transfer Cars . . . Thermo Metal (Bottle) Cars . . . Jack Cars . . . Ingot Cars

ENGINEERS • FABRICATORS

Automotive Production

YEAR	CARS	TRUCKS
1957*	6,158,000	1,083,000
1956	5,816,000	1,104,000
1955	7,920,000	1,249,000
1954	5,559,000	1,042,000
1953	6,117,000	1,206,000
1952	4,326,000	1,218,000

*Estimate from Ward's Automotive Reports

sizable decline of Nash and Hudson.

As the year progressed buyers became more economy conscious, and Rambler gains continued. With the introduction of new models last fall, AMC gave up all pretense of competing directly with the Big Three. It dropped Nash and Hudson from the automobile picture, and began to concentrate all of its efforts on compact and economy-size vehicles.

AMC president George Romney described the decision as a move to "outflank" the industry leaders and take over the spot where AMC had the greatest success.

Economy Model Sold—Studebaker-Packard didn't fare as well. A slow start gained little momentum. Packard was downgraded to an upgraded Studebaker, and sales virtually disappeared. In mid-year Studebaker pulled a switch. It introduced the Scotsman, a stripped version of its Champion line. A modest production schedule was soon doubled and the full-sized economy car was a relative success.

The growing strength shown by AMC, and the interest shown in S-P's economy model points-up another significant development in 1957. Beetle-like foreign cars made impressive gains on the U. S. market. An increasing number of people became economy and space conscious. Some 200,000 small cars were sold during the year, about double the previous year. And the U. S. automakers moved to import their own foreign products.

Labor's Demands—Walter Reuther has served notice, in no uncertain terms, his union is going to seek the largest labor package ever. A man of unwavering determination,

he has outlined a stiff package for the automakers to swallow. The toughest demand is for a reduced work-week. As yet, he hasn't indicated what form the shorter week would take—fewer days or fewer hours.

He has indicated he will not be satisfied in getting the same pay for less work, but will demand an additional increase. Skilled workers will get even more attention this year. Dissatisfaction over a diminishing differential between skilled and semi-skilled workers caused serious internal disorders in 1955.

Automakers will offer greater resistance to union demands than they did three years ago. They are not being pressured for a quick settlement by the prospects of a record production year.

Chances of a Strike—Prospects for a strike appear good. Ford, as three years ago, appears to be the most logical point of attack. It conceded quickly to the principle of supplemental unemployment benefits last time. The company is in a good financial position to survive

the expense of a strike. But it has also gained ground on GM—ground it doesn't want to lose.

Chrysler, too, is a good candidate. The past year has been a successful one. They are in a stronger financial position than in 1955. But they "took" the last big strike, a factor that seems to weigh slightly in their favor.

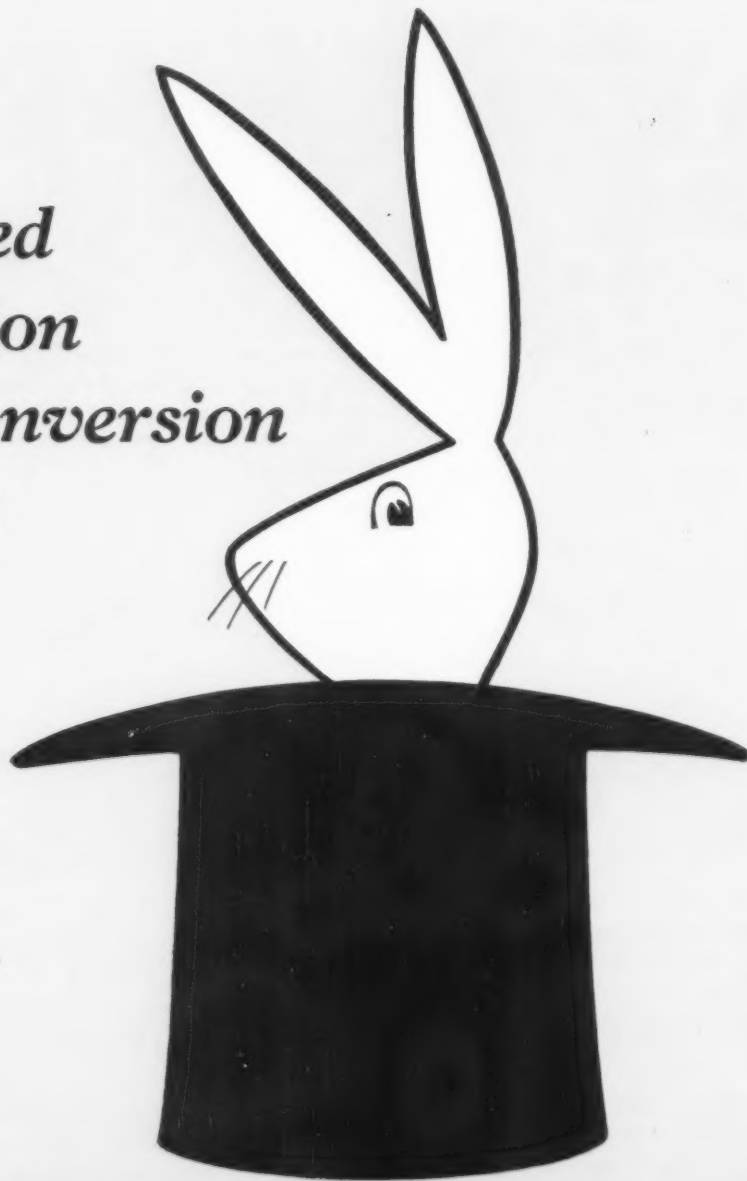
There is no good reason to discount GM as the target. However, reports had it after Ford set the pattern in 1955 that GM executives were "upset" over the union's "easy" victory. GM would likely offer more resistance than either Ford or Chrysler.

Industry Is Optimistic—But assuming comparative labor and world peace, what are the auto industry's prospects for 1958? Despite slowing sales, auto executives look for 1958 to approximate 1957. Allowing for a natural optimism on their part, it is more likely that auto production will drop to a level closer to 5.65 million. This past year more than 6.15 million passenger cars were produced.

THE BULL OF THE WOODS



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automation
makes conversion
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Talk to

Snyder

TOOL AND ENGINEERING COMPANY

3400 E. Lafayette, Detroit 7, Michigan

Special Machine Tools with Automation for More Than 30 Years

Expect Better Business in 1958

Pick-Up Will Come Sooner Than Many Think

Government experts see boost in business in second quarter, after a slow spring.

Current conditions are called a "shake out" period.

Key factors—bigger defense, public works and consumer spending.—By G. H. Baker.

■ Recovery in industrial activity is likely to occur sooner than some forecasts would have you believe.

Overall, business this year ought to finish at or very close to 1957 totals. There'll be some slow weeks in the first quarter and early spring. A pick-up will probably become apparent during the second quarter, government experts believe.

Reasons for a Rise—A rise in government spending for defense is part of the reason for the expected rise in total U. S. economic activity. And big outlays by consumers (personal savings are high; sooner or later they'll spend it) is another. The huge federal highway program, and other costly public-works projects will add zip to the total spending picture. Investments for new plants and equipment will probably run \$1 billion to \$2 billion below the 1957 rate of \$37 billion, still a powerful hypo to sales and to payrolls.

Adding up these and other business stimulants, it's apparent the current let-down in production and sales is likely to run its course by the end of the second quarter, not in the third or fourth quarters as some calculations show.

Hard Work Ahead—This doesn't mean business is going to perk up automatically along about March.

Far from it. Salesmen's order books will be filled only by strenuous efforts in the weeks ahead.

What's happening, of course, is the U. S. economy is going through a "shake-out" period. In this case, it will probably be short. But it serves as a meaningful reminder to management and union leaders that a free economy must pause for breath now and then.

Here are some other developments you can look for in 1958.

Wages Will Rise—Despite rising unemployment, labor unions will press hard for wage increases. Union bosses admit the sag in production has taken some steam out of the drive for bigger paychecks. But they're under pressure from the rank-and-file to push for higher pay, more benefits, and shorter hours. Walter Reuther (AFL-CIO United Auto Workers) is demanding (but not very hard) a four-day workweek. This is probably a de-

vice to get into a favorable trading position when the time comes to talk hourly wage rates with the three big auto producers.

No Price Control—Federal controls over prices, rents and wages are not now in sight. There are high officials in the Administration and influential congressmen in both parties who believe these controls should be written into law without delay. Secretary of State Dulles, for example, says he'll campaign actively for price controls if the federal budget shows signs of getting out of balance. And Senator Capehart (R., Ind.), ranking minority member on the Senate Banking Committee, would have Congress pass a sweeping price-control program for the duration of the "emergency"—however long that may be. Chances are a majority of Congress won't "buy" the price-control idea unless runaway inflation looms in sight.

What's Ahead in Labor Laws?

Now that Congress has official, and much-publicized, evidence of racketeering in union affairs, some overdue improvements will result.

Here's what to expect the White House to ask, and what to expect Congress to write into law:

Secret balloting by rank-and-file for union officers. (This won't get far, for most unions oppose it.)

Tougher rules on picketing and secondary boycotts. (Doubtful, for same reason.)

Public registration of union fi-

nancial records. (Yes. All but a few pension and welfare funds are wholly paid by management, so unions favor this.)

Creation of a new Federal labor commission to take charge of the welfare fund reports. (Yes, for the same reason.)

A Federal right-to-work law will not be asked by the White House, nor will one be enacted by the Congress. (Privately, many officials think such a law is needed, but they believe this is not the time to espouse one publicly.)



Cutting time for the West

In the West you can plan your production time-tables with confidence when you specify Kaiser Steel, because you are assured of delivery *when promised*.

And because of the nearby location of Kaiser Steel's Fontana plant, you are assured of *the fastest possible carrier delivery time*.

As a result, you often can operate on smaller inventories, reducing capital investment—a powerful incentive for small business to get started and for large business to expand.

Currently, Kaiser Steel is busy completing a capacity-doubling expansion at Fontana that will establish us as the largest steelmaker west of the Mississippi.

To the West, this means an additional capacity of 1,500,000 ingot tons annually of America's number-one metal. To our customers it means *service*—better than ever, *locally available* to meet their needs.



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Market Shifts Due in Farwest

Missiles and Electronics Will Gain in '58

New missile orders should pep up the West Coast market during the rest of the year.

However, steel demand will probably slip as substantial increase is made in ingot capacity.
—R. R. Kay.

■ Look for important changes in the Farwest metalworking scene in 1958. Expected in the next twelve months are: Slipping steel demand in the face of a big hike in ingot capacity; big missile orders; more aircraft industry layoffs; and a continued increase in plants and people on the Coast.

Aircraft Outlook Mixed — Aircraft and missile manufacturing, with a \$7 billion backlog, will remain the pace-setting industry. But shifts in emphasis are due.

King-size new missile orders should pep up sagging business and spirits. The aircraft industry has \$775 thousand in missile business. However, it's mostly in research and development.

About 25,000 aircraft workers will lose their jobs by May. But the industry will still be the top Farwest manufacturing employer with a payroll of 275,000. There'll be more orders for jet passenger planes, more emphasis on building private planes, and aircraft manufacturers doing more of their own work. That means fewer subcontractors. Their ranks fell about 500 last year and this year 300 more may disappear.

Buyer Will Rule Steel—The steel customer will be king in '58. Other industry developments will include: A drop in mill shipments from 7.8 million tons to 6.8 million tons; con-

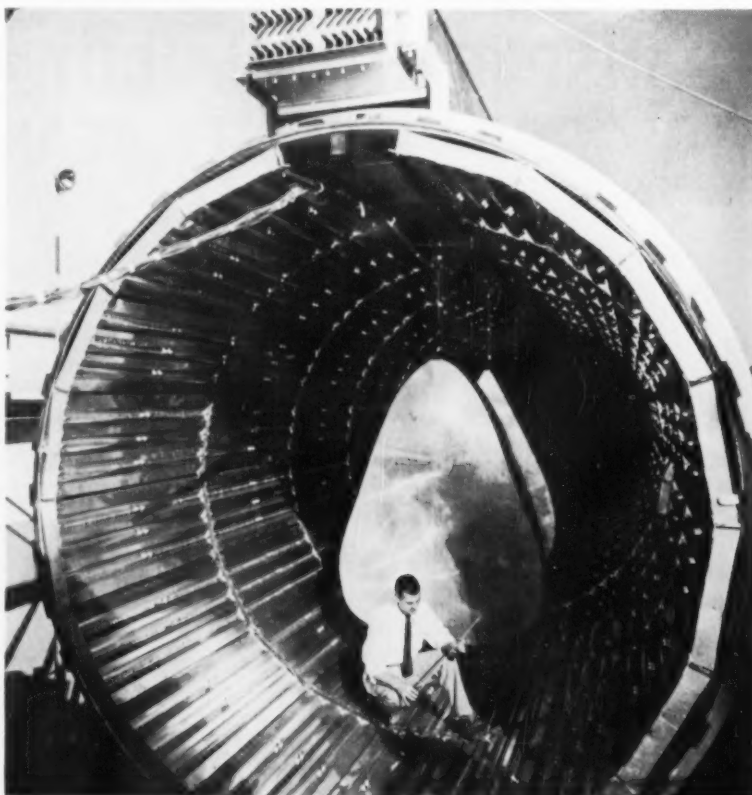
tinued big shipments from Eastern mills; the arrival of new capacity in the Farwest; and the roughest kind of competition at mill and warehouse levels.

Aluminum Stays Strong—Aluminum, a backbone industry in the Pacific Northwest, will grow in 1958. The region's primary capacity stands at one-third of the national output. Don't be misled if this figure begins to shrink. Major new fa-

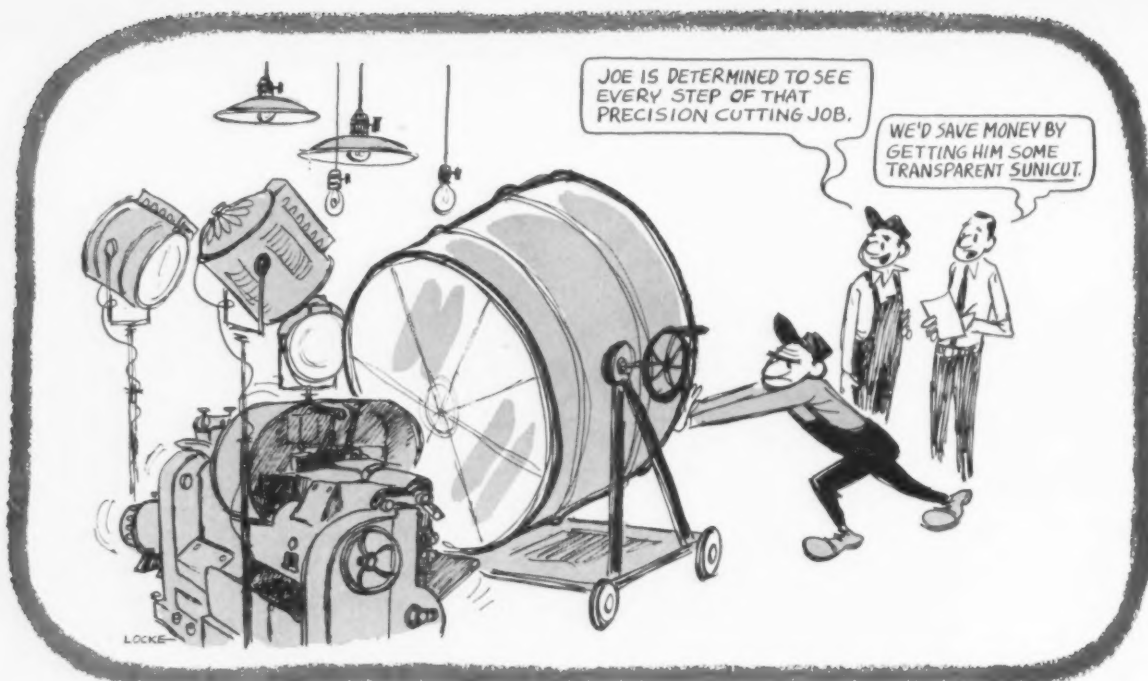
cilities in the East will change the ratio. But actually, more Farwest capacity is coming. It's now in the building stage.

Electronics manufacturing is expected to hit new highs. Three trends can be looked for: Record employment, production, and sales; a greatly stepped up pace, resulting from the big missile push; and a running battle with aircraft manufacturers for a bigger share of the missile-making market.

Keeping Tab on a Jet's Temperature



VACUUM CHECK-UP: This section of test stand at Convair Div. of General Dynamics Corp. is used to check efficiency of air conditioning and electronics systems on the Delta Dart all-weather jet interceptor.



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Builders Bank on Sales Upturn

Only a Matter of Time, Says NMTBA Head

There's tempered optimism among the tool builders as the new year opens.

They expect better market if users regain confidence and replace tools to stay competitive.

—By E. J. Egan, Jr.

■ A downtrend in new orders for machine tools plagued U. S. builders throughout 1957. Will the trend reverse itself this year? Builders can't be sure, of course, but they certainly hope so.

"It's only a question of time," says Alfred V. Bodine, president and treasurer, The Bodine Corp., and president of the National Machine Tool Builders' Assn. How soon, he believes, depends largely on three factors.

Confidence Will Help—The first concerns industry's confidence in the future. Even though many firms know that modernization is imperative, they'll postpone spending plans in the face of uncertainty. There are a number of political, international and economic uncertainties contributing to hesitation and postponement at present, Mr. Bodine says. When these are resolved, he believes deferred buying will be resumed.

Secondly, the NMTBA president thinks that "sheer economic necessity will sooner or later force a resumption of machine tool buying in greater volume." Today's conditions will develop "severe price competition" among companies that use machine tools. To cut manufacturing costs—indeed, to survive—many firms will have to replace "obsolete machine tools with today's models."

Defense Factor Important — The

third time factor involves defense spending. An expanded missile program "would probably require even more machine tool buying than is presently contemplated," Mr. Bodine feels. And he voices the hope of all U. S. builders "that the Defense Dept. may consider a change in policies with respect to the purchase of foreign machine tools."

"Import" U.S. Tools?

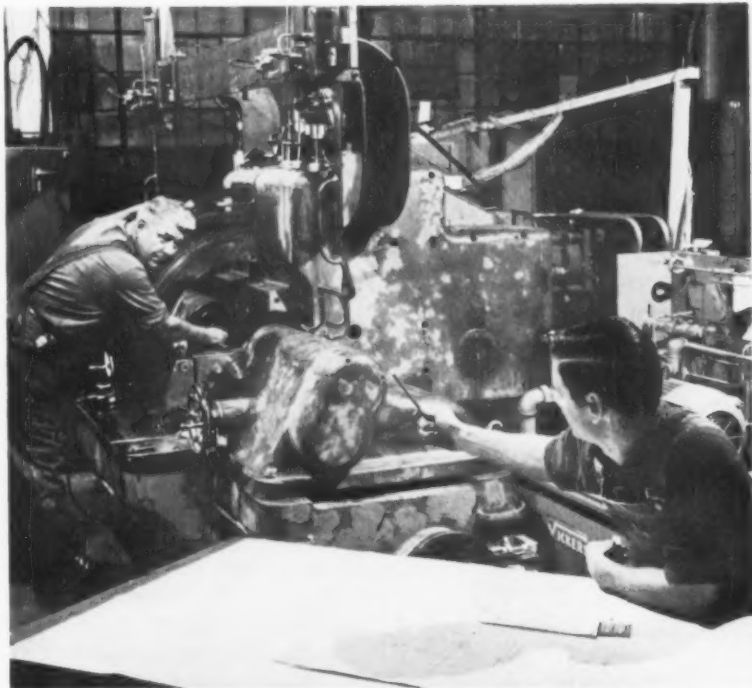
Speaking of "time," some machine tool experts wonder how long it might be until U. S. builders start making their tools in Europe so that

they can sell them back here for less money.

Some firms are already operating European plants; others are known to be thinking seriously of doing so. On the face of it, such moves are ostensibly to protect and/or recover pre-World War II export markets which a revitalized European machine tool industry has been capturing.

Welcome Home—But it seems that, "in time," U. S. tools built in Europe with "50-cent-an-hour labor" might just find their way back to this country. Don't bet it won't ever happen.

Where Experience Counts



FINAL TOUCHES: Assembling a Wickes center-drive lathe to machine truck crankshaft bearings at a net rate of 16.7 shafts per hour.

INDUSTRIAL BRIEFS

Roger — The U. S. Navy has awarded The Kaman Aircraft Corp. a \$13 million contract for a prototype quantity of HU2K-1 utility helicopters. Winner of a Navy Bureau of Aeronautics design competition, the HU2L-1's will be powered by a General Electric gas turbine. The helicopter, which is equipped with a single rotor, is a successor to the HOK-1 and the HUK-1, both of which are presently being produced for the Navy and Marine Corps.

Joining the Ranks—A new firm, known as Bergren Steel Corp., has been formed in Oakland, Calif. The company will be steel distributors specializing in steel plate and plate burning. A No. 56 oxygraph torch-cutting machine, complete with electronic tracer, has been installed.

New Drill Team—The Black & Decker Mfg. Co., Towson, Md., has formed a new subsidiary company in Auckland, New Zealand. It will be known as Black & Decker (New Zealand) Ltd., and will sell and service the electric tool company's products in the New Zealand area. The company has had distribution in New Zealand for nearly 30 years.



"Stop me if you've heard this one!"

Pay Station to Europe?—Westinghouse Electric Corp. is manufacturing electronic equipment that will clarify and speed up trans-oceanic telephone calls to Europe. The company's electronics plant is producing amplifiers to be installed as a part of the radio transmission equipment of American Telephone & Telegraph Co. Order calls for the manufacture of 10 power amplifiers for A. T. & T.'s Lawrenceville, N. J., transmission site. Units valued at about \$500,000 will be delivered between now and next April.

PA's Elect—C. C. Bishop, purchasing agent, Alan Wood Steel Co., Philadelphia, was elected president of the Purchasing Agents Assn. of Philadelphia. Other officers elected were: J. F. Moorhouse, Standard Pressed Steel Co., first vice president; J. M. Hill, Jr., Westinghouse Electric Corp., second vice president; E. H. Henderson, Philadelphia National Bank, secretary-treasurer, and M. C. Case, Rohm & Haas Co., national director.

Takes Control—Crucible Steel Co. of America has acquired full ownership of Rem-Cru Titanium, Inc., from Remington Arms Co. Transaction involved an exchange of 150,000 shares of newly-issued Crucible stock for 5000 shares of stock and \$2.8 million in notes of Rem-Cru. The Securities and Exchange Commission has granted approval of the transaction. Mutual advantages to both companies will result in production, distribution and scientific research.

Nuclear Flattop—Westinghouse Electric Corp. has been awarded a contract for the design and furnishing of reactor compartment components for the nuclear powered aircraft carrier (CVAN) by the Navy. Contract price is over \$46 million, and covers such items of equipment as instrumentation, controls, valves and pumps. The contract for designing and furnishing the pressure vessel and steam generators was awarded to Westinghouse in October, 1956. This was under advanced procurement for the carrier authorized

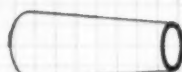
by Congress as a part of the fiscal 1957 shipbuilding program.

On The Waterfront—The H. B. Jordan, the first of two new diesel towboats, has been added to U. S. Steel's river fleet. This marks the first time that this corrosion-resistant steel has been used in the hull construction of an inland waterway towing vessel. All parts exposed to water from the main deck down are of stainless steel. The 120-ft long craft was christened after Harvey B. Jordan, U. S. Steel executive vice president—operations.

For Rainy Day—Armco Drainage & Metal Products, Inc., has purchased 15 acres of land in Hillsboro, Ore., as a possible future expansion site. The land has been purchased from the Hillsboro Industrial Development Corp. for \$27,000. The site was acquired with the thought that Armco Drainage's present Portland plant may outgrow the space available there. The Portland plant manufactures corrugated metal pipe and employs about 30 people.

Calling for Orders—General Electric Co.'s Communication Products Dept. has developed the communication industry's first transistor-powered line of mobile radio equipment. A 60-watt mobile unit is a feature of the new line and is now in pilot production. G-E will begin accepting orders in January on the equipment. It is estimated that the majority of power supplies provided with G-E equipment in 1958 will be of the transistor type.

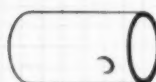
Flats Fixed—A retread and repair plant, built by Goodyear Tire & Rubber Co. at Sacramento, Calif., is scheduled to open April 1, 1958. It is to be devoted exclusively for the repair and retreading of giant off-the-road tires. The plant has been built at a cost of about \$500,000. This facility will meet the growing needs of contractors working on highway, mining and logging projects and construction programs such as airports and dams.



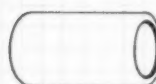
TAPERING



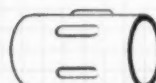
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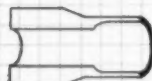
ROLLING



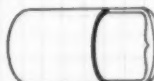
FLUTING



SWAGING

UPSETTING
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REDUCING



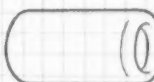
SPINNING

SLOTTING
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CHAMFERING



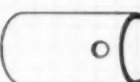
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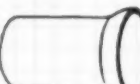
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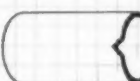
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BENDING



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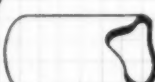
NICKING

BEADING
(Expanded or Depressed)

SHAPING



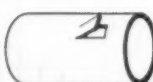
NOTCHING



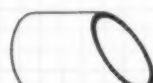
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TABBING

SLOTTING
(Closed)

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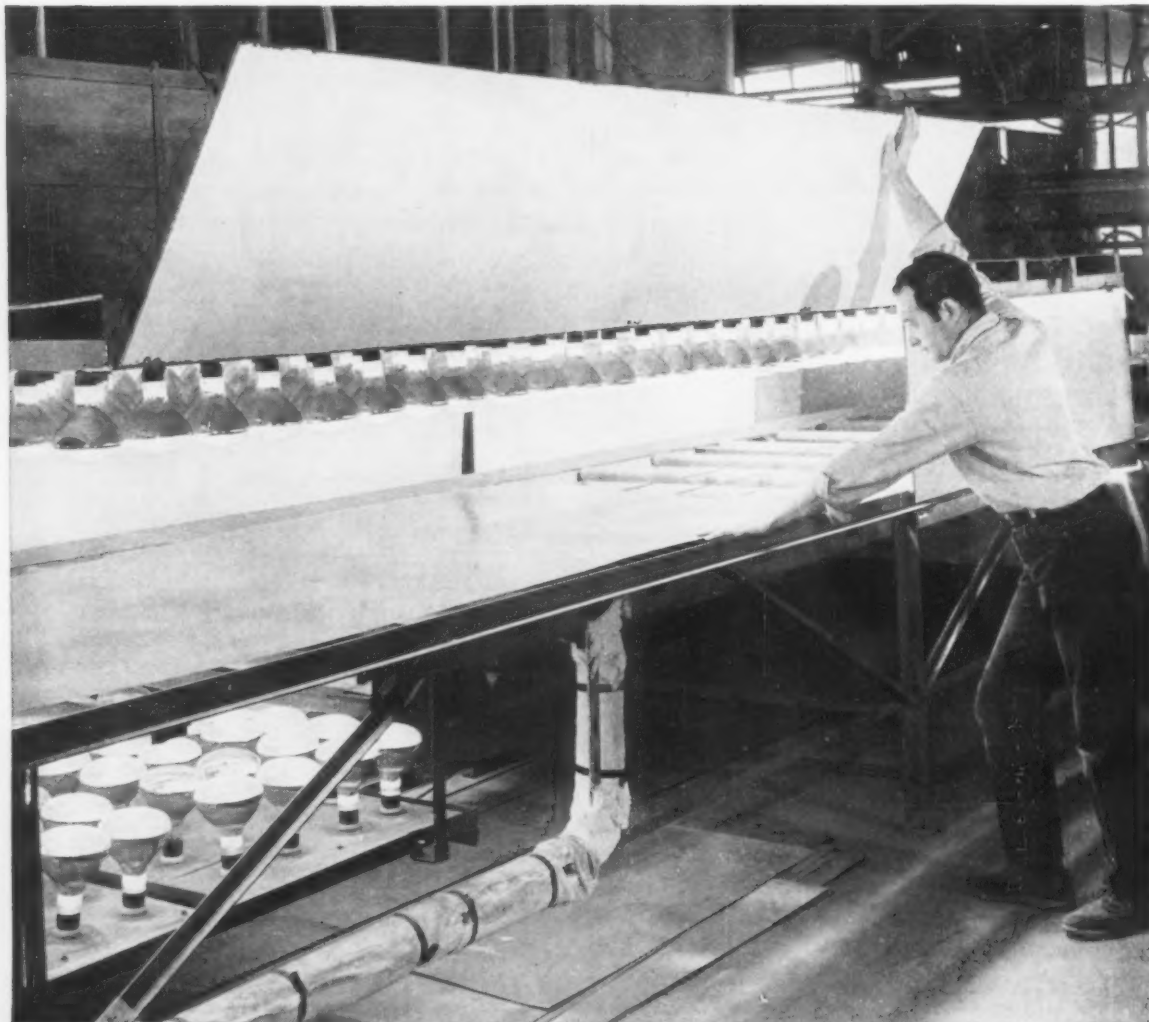
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M. W. Cresap, Jr., elected president and chief administrative and operating officer, Westinghouse Electric Corp.; **G. A. Price**, remains chairman of the board; **E. V. Huggins**, vice president, elected chairman, executive committee; **J. K. Hodnette**, elected executive vice president; **G. G. Main**, becomes vice president, finance; **F. E. Dalton**, named controller; **C. P. Myers**, named corporate secretary; **R. B. Read**, elected asst. treasurer.



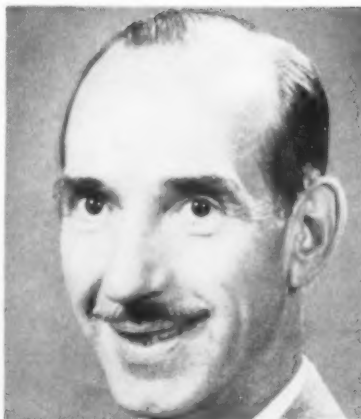
N. B. McFarlane, elected vice president, Pittsburgh Metallurgical Co., Inc.

U. T. Kuechie, elected vice president, Automotive Div., A. O. Smith Corp.

W. W. Finke, elected vice president, Minneapolis-Honeywell Regulator Co.



R. J. McCluskey, appointed chief machine design and development engineer, Associated Spring Corp.'s research center, Bristol, Conn.



J. A. Bright, elected vice president, Pittsburgh Metallurgical Co., Inc.

C. T. Warren, appointed general manager, Industrial Truck and Hospital Equipment Div., Colson Corp., Elyria, O.

Frank Randall, appointed president, Amperex Electronic Corp., Hicksville, Long Island, N. Y.

E. F. Martin, elected vice president, steel operations, Bethlehem Steel Co.; **F. M. Huffman**, named vice president, traffic.

H. M. Weed, elected vice president, Anaconda Sales Co., subsidiary of The Anaconda Co.



H. J. Morrison, named asst. general manager, Fabricating Div., Aluminum Co. of America, Pittsburgh.

MEN IN METALWORKING

A. P. Gagnebin and **L. E. Grubb**, appointed asst. vice presidents, The International Nickel Co., Inc.

C. A. McTaggart, elected vice-president, Armco Drainage & Metal Products, Inc., Middletown, O.

Dr. B. D. Thomas, named president, Battelle Memorial Institute.

John Stevens, elected vice president, American Can Co.; **R. J. Sund**, appointed vice president and general manager, Marathon Div.

S. T. Rose, named group sales manager and **H. L. Hollingsworth**, staff engineer, Plastics, Wire and Cable, Instruments and Foundry Group, The Electric Auto-Lite Co., Toledo, O.



W. R. Johnson, appointed chief research metallurgist, Associated Spring Corp.'s research center, Bristol, Conn.

T. W. LeNay, appointed vice president, Perkin Engineering Corp., El Segundo, Calif.

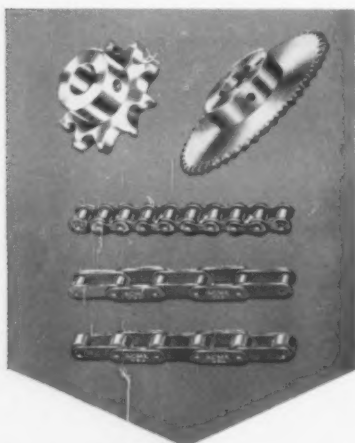
E. F. Baker, named marketing manager, forgings, Kaiser Aluminum & Chemical Sales, Inc., Oakland, Calif.; **B. B. Clow**, appointed forgings product manager, Chicago.

W. L. Carley, promoted to assistant to Worksaver, Warehouse Truck sales manager, Yale Materi-

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- ★ Simplifies purchasing.



Write Dept. 21-B for new 100-page Illustrated Catalog, including new engineering section showing diagrams of 36 methods of chain driving.



als Handling Div., The Yale & Towne Mfg. Co.; **D. D. Spurr** appointed asst. gas truck sales manager, Yale Materials Handling Div.



C. E. Smith, named administrative sales manager, Machinery, Cutting Tool and Gage Divisions, Pratt & Whitney Co., Inc.

R. F. Hill, appointed mechanical engineer, International Resistance Co., Philadelphia; **Mark Steidlitz**, appointed development engineer.

E. J. Masterson, appointed central district sales manager, Body Bros., Inc., Bedford, O.



K. A. Matticks, named manager, product development, Stainless Steel Sales Div., Crucible Steel Co. of America.

E. C. McLaughlin, appointed purchasing agent, Manufacturing Div., La Crosse, Wis., The Trane Co.; **L. A. Brewer**, appointed purchasing agent, Clarksville, Tenn., Manufacturing Div.

B. M. Wundt, named turbine structural engineer, General Electric Co.'s Large Steam Turbine-Generator Dept., Schenectady, N. Y.

D. W. Saladin, appointed asst. general superintendent, Fairless Works, National Tube Div., U. S. Steel Corp., Morrisville, Pa.



Roy Golze, appointed district manager, Philadelphia area, Vickers Inc., Detroit.

J. H. Roy, promoted to manager, aircraft sales, Townsend Co., New Brighton, Pa.

R. P. Lane, promoted to assistant to the wrought products sales manager, The Dow Chemical Co., Midland, Mich.



S. S. Carlton, appointed field sales representative, northeastern United States, Horizons Inc.

T. E. Smith, named chemical engineer, process improvement section, Chemical Plant Engineering Dept., Pittsburgh Coke & Chemical

Co., Pittsburgh; **W. J. Blaha**, named maintenance engineer, maintenance engineering section.



C. R. Bayman, appointed sales engineer, The Herr Equipment Corp., Warren, O.

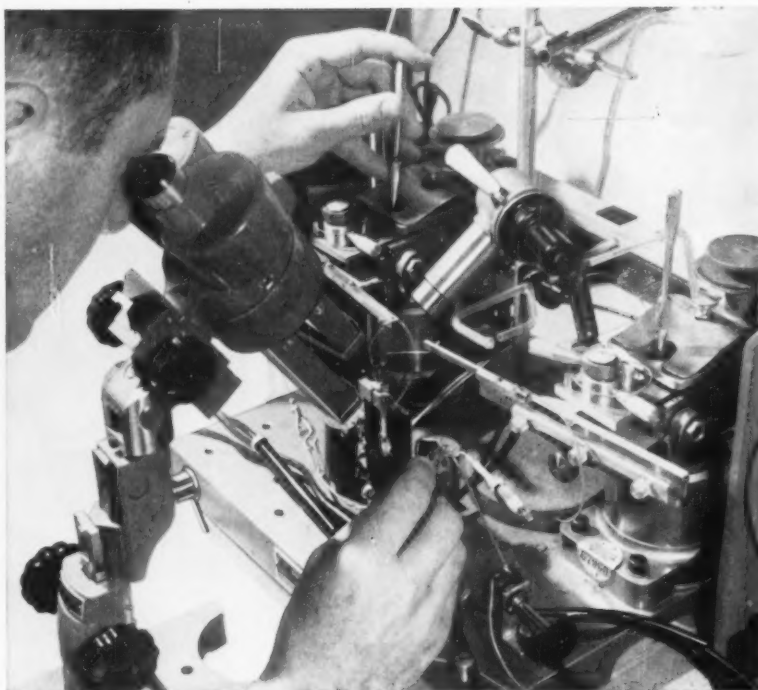
Richard Chase, appointed purchasing agent and **Charles Doucette**, named head, Tube and Vacuum Dept., High Voltage Engineering Corp., Burlington, Mass.

Frank Clarke, appointed military relations engineer, Semiconductor-Components Div., Texas Instruments Inc., Washington, D. C. headquarters.

P. R. Gouwens, named supervisor, foundry and steelmaking section, Metals Research Dept., Armour Research Foundation of Illinois Institute of Technology, Chicago.



J. E. Burnett, appointed vice president and manager, operations, Designers for Industry, Inc., Cleveland.



3-D MICRO-VISION helps RAYTHEON develop new SPACISTOR amplifier



Spacistor shown next to ordinary pinhead.

The Spacistor, Raytheon's new semiconductor amplifier, opens new horizons in missile and communications equipment design. Still in development, the Spacistor promises to combine many advantages of transistors and vacuum tubes.

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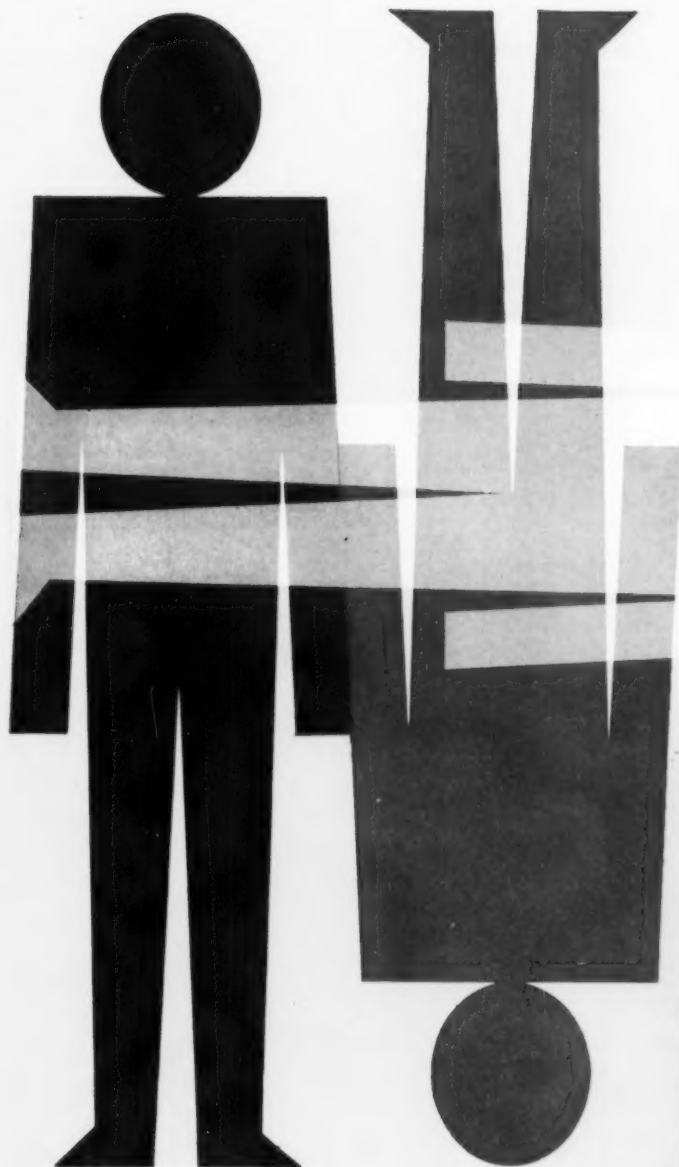
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THE IRON AGE

Survey Report 1958



This report brings you the results of a 17-industry survey made by The IRON AGE during mid-November.

It covers a cross-section—by industry and by plant size—of these 17 industries. Not only are they metalworking plants themselves, they are suppliers to metalworking.

The opinions, in almost all cases, are those of the top executives in the responding companies. The survey was answered by 31 percent of all plants in these 17 industries with 50 or more plant workers, except in tools and gages, 100 or more.

The outlook for steel, aluminum, aircraft and major consumer goods industries begins on p. 149.

Industry Executives Forecast:

**SALES, PROFITS,
WAGES, SELLING PRICES**

and report upon:

**Order backlogs
Raw material inventories
Finished goods stocks**

Prices Are Still Moving Up

Half of industries surveyed plan no price increases this year but 40 pct see the average going up 5 pct.

A few see some price reductions, averaging 6 pct but views vary by industry.



Q: Your selling prices — what is the trend for 1958?

Effect of plant size on responses:

Those who expect an increase

Plant size	Expected Increase:
50 to 99 workers	5%
100 to 499 workers	5%
500 to 999 workers	5%
Over 1000 workers	4%

■ No one has yet been able to stop the wage-price spiral but there are signs that the price portion may flatten out somewhat this year. Current management thinking in a good section of metalworking is to try to hold the price line this year. Or more properly, many executives feel they won't be able to raise prices much, if any.

Automotive has already marked up a small price increase for the '58 line; how successfully remains to be seen. Steelmakers don't see how they can pay the wage increase they are obliged to shell out this summer without raising prices.

Hold the Line? — The pattern varies among the metalworking industry but an average of responses

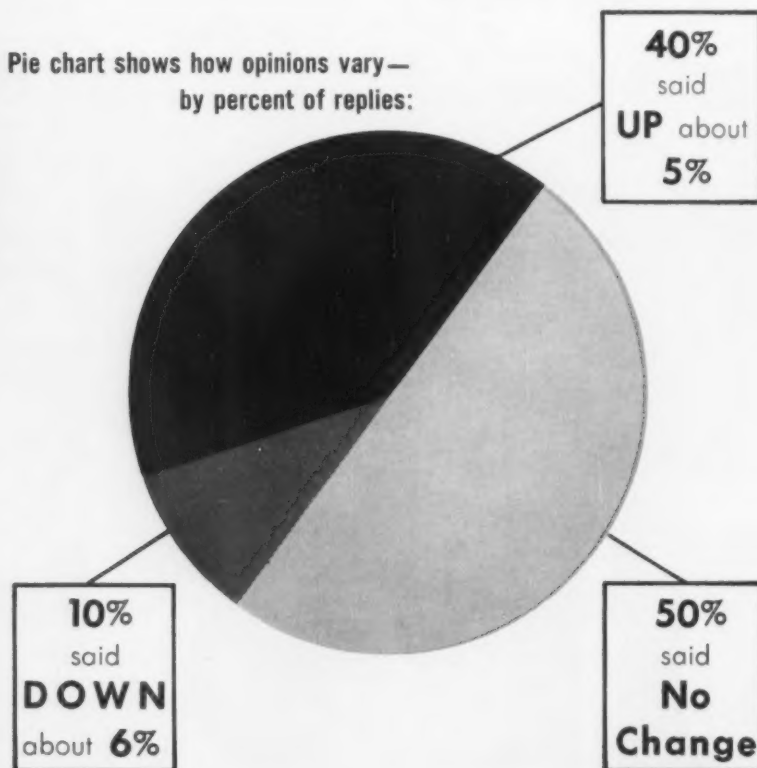
(weighted on the basis of value added by manufacture) shows no increases planned by half the respondents.

But 40 pct said they expect to raise prices by an average of 5 pct. The replies varied from 2 to 10 pct, with the average weighted on the same value-added basis.

Some 10 pct of respondents saw their selling prices dipping by an average of 6 pct. Estimates of price cuts ranged all the way from 2 to 10 pct. Some have already been made, though most unwillingly.

Price reductions already made or contemplated are in highly competitive lines where they don't increase the total volume of business; they merely alter distribution of the orders.

Pie chart shows how opinions vary — by percent of replies:



Q: How will 1958 sales volume compare with 1957?

Effect of plant size on responses:

Those who expect an increase

Plant size Expected Increase:

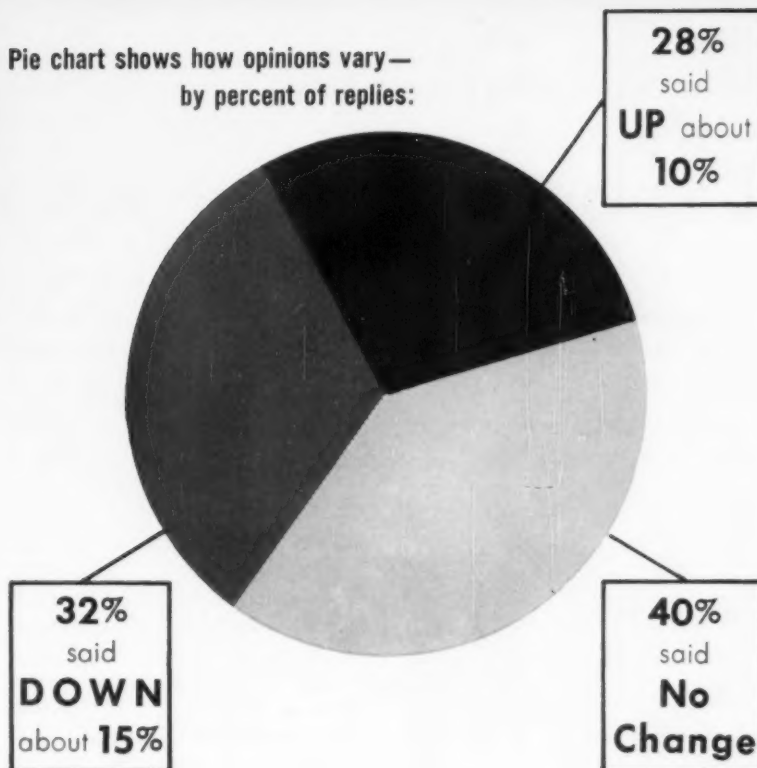
50 to 99 workers	13%
100 to 499 workers	10%
500 to 999 workers	6%
Over 1000 workers	4%

Those who expect a decrease

Expected decrease:

50 to 99 workers	18%
100 to 499 workers	17%
500 to 999 workers	22%
Over 1000 workers	22%

Pie chart shows how opinions vary—
by percent of replies:



Survey Report 1958 | Sales Volume

Opinions Vary on Sales Outlook

Weighted average of companies responding to IRON AGE survey shows a slight dip in sales volume in 1958.

While 40 pct of the 17 industries surveyed expect no change, about a third see a 15-pct dip, 28 pct see an increase of 10 pct.



At the time (mid-November) that The IRON AGE 17-industry survey was taken, the 1958 sales curve showed a mixed trend. Nothing much has happened since then to change the outlook but defense spending could firm the picture later this year.

Forecasts of industry executives reported in the chart above show that a weighted average of 28 pct of the industries covered expect better sales this year than last. The average increase expected, also weighted, was 10 pct.

Some See 15-Pct Dip—On the down side, 32 pct expected an average decline of 15 pct. But 40 pct

expect no change. On balance, then, expectations of executives replying to the survey questions are for a slight dip in sales of metalworking companies who supply the metalworking industry.

This latter picture is in line with thinking of the business advisory council of the Dept. of Commerce. That group concluded last November that gross national product might drop about 1 pct during 1958.

But it is at variance with the opinions of many business economists who expect that gross national product will rise this year; some say by as much as 5 pct.

Labor May Get Another 5 Pct

Average wage increase of 5 pct is expected by 76 pct of firms in The IRON AGE survey.

Some see dip in wage costs; patterns vary by industry.



■ Major wage contracts up for renewal this year include automotive, aircraft, and farm equipment. In addition, half a million workers in basic steel will, under their contract, get an increase of about 13¢ an hour. There will be some spill-over to other industries and to salaried people; all of which will add more than 5 pct to wage costs in this area on July 1. Additions for cost of living increases are not included in these figures.

The 17 industries reported upon here are listed on p. 185. They do not include steel, automotive, etc., which are covered on p. 149. In the group covered here, some 76 pct of respondents expect to have wage increases averaging 5 pct.

Pattern varies—Not all industries expect the same increase in wage costs. There are signs that some workers in machine tool plants have seen the industry's backlog figures and will not press for increases this year—at least not too hard. Increases of 5 pct are anticipated by only 66 pct of the machine tool builders, against the survey average of 76 pct.

A larger percentage of the machine tool industry (20 pct) sees a drop in wage costs. The survey average shows only 12 pct expecting a 5 pct drop in wage costs.

For a big chunk of the economy, the wage outlook depends on the UAW-CIO's actions this spring.

The Profit Outlook is Cloudy

Nearly half of 17 industries surveyed see their average off by 17 pct.

But more than a fifth look for an average gain of 9 pct.

■ The profit pie, and how it will be sliced, typified the problems faced by metalworking management in its 1958 planning. It embraces all the other questions in this survey. And admittedly, estimates made at this time are not as firm as they were a year ago. Even those were several percentage points off target.

To the overall profit outlook for the 17 metalworking industries

surveyed (see chart, right), several comments must be added.

Weighted Average—In reading the chart you should know that both the percentage of respondents and the percentage increase or decrease are weighted. Weights are based on "value added by manufacture," industry-by-industry.

This means that "Copper and Brass Rolling" for instance, has a weight of 5.7 pct of the total survey. The brass mills had a fairly poor year in '57. For '58 half the industry expects an average increase of 12 pct in profits. Gray iron foundries, with a weight of

11.7 pct, are gloomy: more than half the respondents predicted a 23 pct drop in profits this year. Only 14 pct saw them going up an average of 13 pct.

These are the two extremes from the average plotted in the chart at the right. Details on each industry are on following pages.



Q: How much of an increase in wage costs, if any, do you expect?

Effect of plant size on responses:

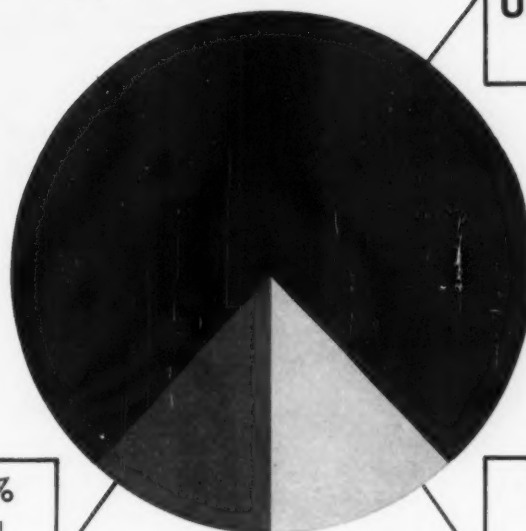
Those who expect an increase

Plant size Expected Increase:

50 to 99 workers	5%
100 to 499 workers	5%
500 to 999 workers	5%
Over 1000 workers	4%

Pie chart shows how opinions vary — by percent of replies:

12%
said
DOWN
about 5%



76%
said
UP about 5%

12%
said
No Change

Q: What is your 1958 profit outlook?

Effect of plant size on responses:

Those who expect an increase

Plant size Expected Increase:

50 to 99 workers	13%
100 to 499 workers	10%
500 to 999 workers	12%
Over 1000 workers	9%

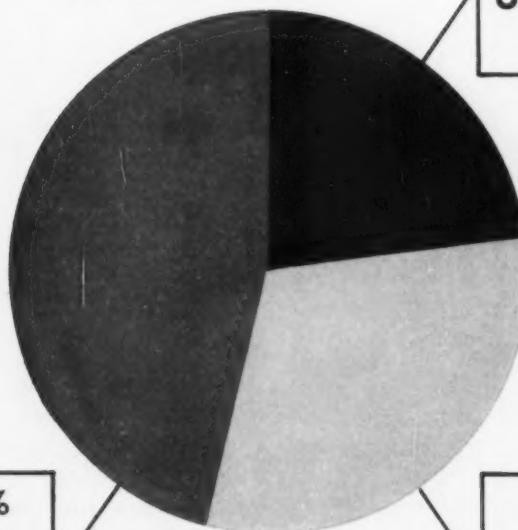
Those who expect a decrease

Expected decrease:

50 to 99 workers	18%
100 to 499 workers	22%
500 to 999 workers	22%
Over 1000 workers	27%

Pie chart shows how opinions vary — by percent of replies:

46%
said
DOWN
about 17%



23%
said
UP about 9%

31%
said
No Change

Q: How do your year-end inventories compare with those of a year ago?

Replies by Industry, Weighted by Plant Size Industry:	Raw Materials			Finished Goods		
	Below end of 1956	About the same	Above end 1956	Below end of 1956	About the same	Above end 1956
Construction and Mining Machinery	45%	16%	39%	24%	27%	49%
Conveyors, Cranes and Hoists	57%	22%	21%	39%	33%	28%
Copper and Brass Rolling	49%	51%	—	76%	3%	21%
Cutting Tools and Gages	31%	32%	37%	41%	17%	42%
Electric Motors and Controls	57%	24%	19%	41%	36%	23%
Fasteners	44%	39%	17%	28%	23%	49%
Gray Iron Foundries	45%	44%	11%	n. a.	n. a.	n. a.
Heat Treating Equipment	27%	54%	19%	35%	34%	31%
Industrial Trucks	45%	27%	28%	50%	43%	7%
Instruments	34%	34%	32%	33%	29%	38%
Machine Tools	49%	20%	31%	27%	16%	57%
Malleable Iron Foundries	62%	20%	18%	n. a.	n. a.	n. a.
Nonferrous Foundries	62%	30%	8%	n. a.	n. a.	n. a.
Pumps and Compressors	40%	35%	25%	31%	44%	25%
Steel Forgings	58%	35%	7%	n. a.	n. a.	n. a.
Steel Foundries	30%	54%	16%	n. a.	n. a.	n. a.
Welding Equipment	86%	14%	—	33%	59%	8%

n. a.: not applicable.

Survey Report 1958 | Inventories

Is Inventory-Cutting at an End?

No, not if you check expected sales against stocks of raw materials and finished goods in various industries covered by The IRON AGE survey.



▪ Evidence of the slashes in raw materials inventories that took place last year is clear from the first column of the above chart. Makers of welding equipment, some foundries and steel forgers have done the best job.

Still High—But if the inventory figures are related to expected 1958 sales volume (see previous page) it is also clear that there is still more inventory to be worked off in many companies.

Heading industries which show the largest percentage of companies

with raw materials stocks above what they were a year ago is construction and mining machinery, reflecting the fact that the federal road program didn't get rolling last year.

Instrument makers have fairly high stocks but most of them see a pretty good year ahead. Brass mills have cut both raw material and finished goods stocks sharply; so have almost all of the foundries.

Heat treating equipment makers cut raw materials stocks less than other groups. Finished goods inventories are about average.

Order Backlogs Drop



■ The chart below tells the backlog story of the industries surveyed. The data, like that on inventories, are weighted by plant size.

Weighting means that the 40-day backlog of a company with 2500 workers receives 10 times the weight of the same backlog for a 250-man company.

Instruments are in the best spot. Brass mills are almost hand-to-mouth. Foundries have taken a bad licking percentagewise.

Q: How does your year-end backlog compare with that at the end of 1956?

(Average backlogs in various sectors of metalworking, in days)

Industry:	Number of Days Backlog		Percent Decline
	End of 1956	End of 1957	
Construction and Mining Machinery	96	57	41%
Conveyors, Cranes and Hoists	127	87	31%
Copper and Brass Rolling	17	12	30%
Cutting Tools and Gages	78	54	31%
Electric Motors and Controls	90	75	17%
Fasteners	44	31	30%
Gray Iron Foundries	62	29	53%
Heat Treating Equipment	142	97	32%
Industrial Trucks	108	94	13%
Instruments	115	109	5%
Machine Tools	163	89	45%
Malleable Iron Foundries	39	25	36%
Nonferrous Foundries	74	46	38%
Pumps and Compressors	100	87	13%
Steel Forgings	107	64	40%
Steel Foundries	113	61	46%
Welding Equipment	71	54	24%

For detailed reports, industry by industry, see the following pages:

Construction and Mining Machinery	186
Conveyors	
Cranes and Hoists	190
Copper and Brass Rolling	194
Cutting Tools and Gages	198
Electric Motors and Controls	202
Fasteners	206
Gray Iron Foundries	210
Heat Treating Equipment	214
Industrial Trucks	218
Instruments	222
Machine Tools	226
Malleable Iron Foundries	230
Nonferrous Foundries	234
Pumps and Compressors	238
Steel Forgings	242
Steel Foundries	246
Welding Equipment	250

Equipment Makers Bank on Road

Machinery builders cheered by forecast of stepped-up highway program in '58.

This would take some of the sting out of expected lag in capital spending.

Industry more optimistic than most on its ability to make price hikes stick.

■ Charles D. Curtis, commissioner of the U. S. Bureau of Public Roads, predicts that about 1500 miles of interstate highways will be built in 1958. That would be 10 times the 1957 mileage.

For builders of construction and mining machinery this is good news—if it happens. They were all pepped up last year over highway-building prospects, but the program failed to get off the ground.

Good Year Possible—A stepup in highway construction would take up some of the expected slack in building outlays by manufacturing companies. If the spurt in road-building is coupled with a rise in housebuilding, the machinery makers could wind up with a good year.

The industry could stand a little shot in the arm. During 1957 its backlogs dropped from 96 days to 57 days, a decline of 41 pct, on a weighted basis. For the most part its inventories of raw materials and finished goods are up or even with year-end 1956.

Price Outlook—Although competition is sharpening, the industry is more optimistic than most about its ability to raise prices and make it stick. Some 56 pct say prices will be up 5 pct this year compared with a multiple-industry aggregate

of 40 pct for the same percentage increase.

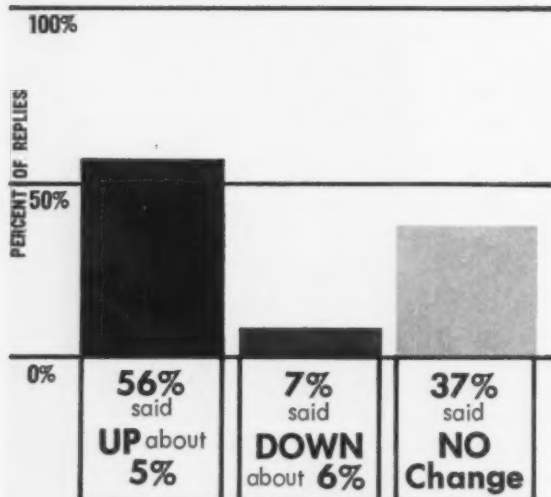
But the construction and mining equipment builders are less optimistic on profits. Some 48 pct expect earnings to drop about 11 pct in '58, compared with general expectations of 46 pct that profits will decline 17 pct. Only 14 pct of the equipment makers look for a profit rise (7 pct) compared with an overall average of 23 pct plumping for 9 pct increase.

Chain Reaction—The comment of one manufacturer pointed up the inter-relationship of industry: "If housing buying credits are relaxed it would help utilities expansion. We make trench excavators. Cross country pipelines will help trencher sales. . . ."

Some 72 pct of the reporting companies expect wage costs to rise about 5 pct this year.

SELLING PRICES

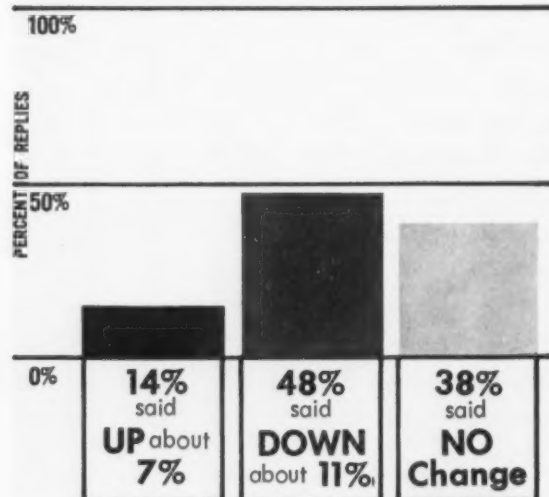
What's the trend?



PROFITS

SIC 3531

How will they compare with '57?



Building Spurt

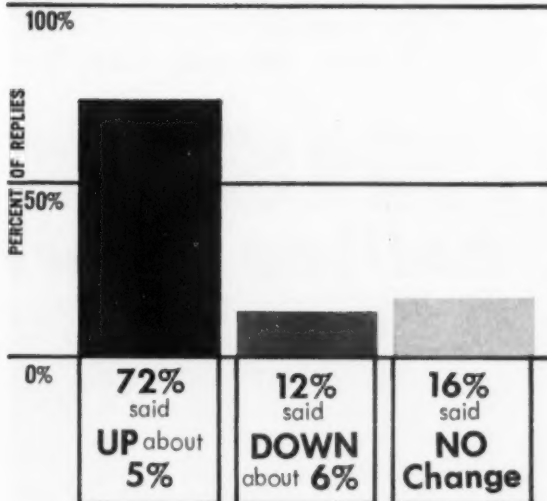
SIC 3531

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	36%	42%
100 to 249	39%	39%
250 and over	25%	19%

WAGE COSTS

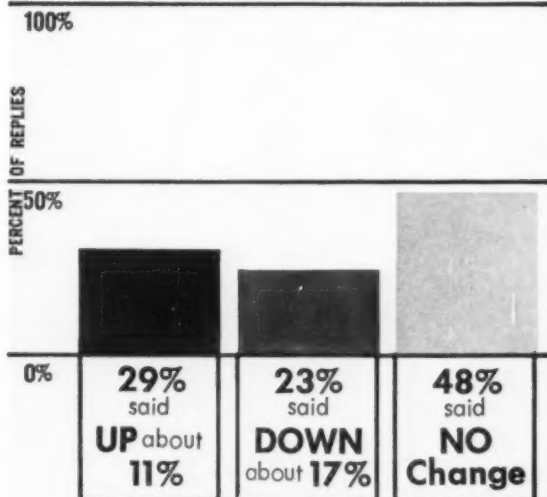
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3531

How will it compare with '57?



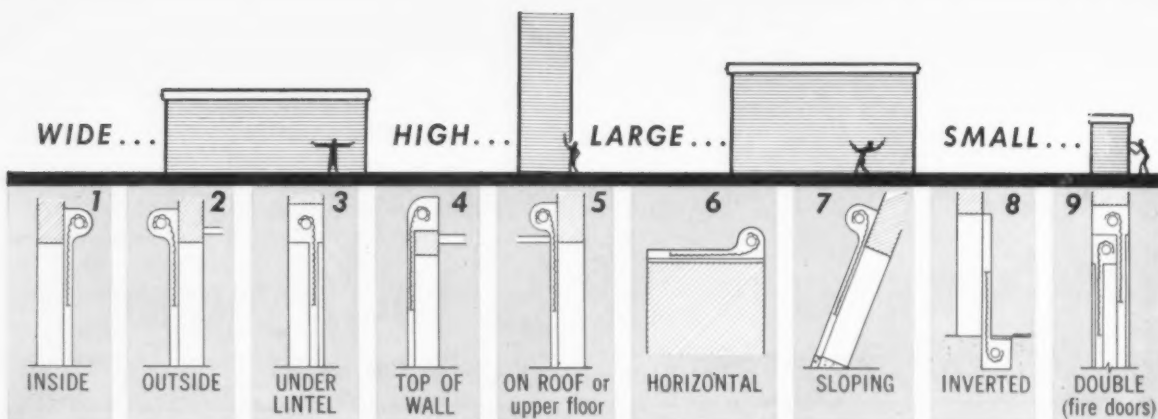
Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Availability to our customers and dealers of bank loans sufficiently large and of long enough term to properly operate their businesses." **John E. Carroll, President,** American Hoist & Derrick Co., St. Paul, Minn.

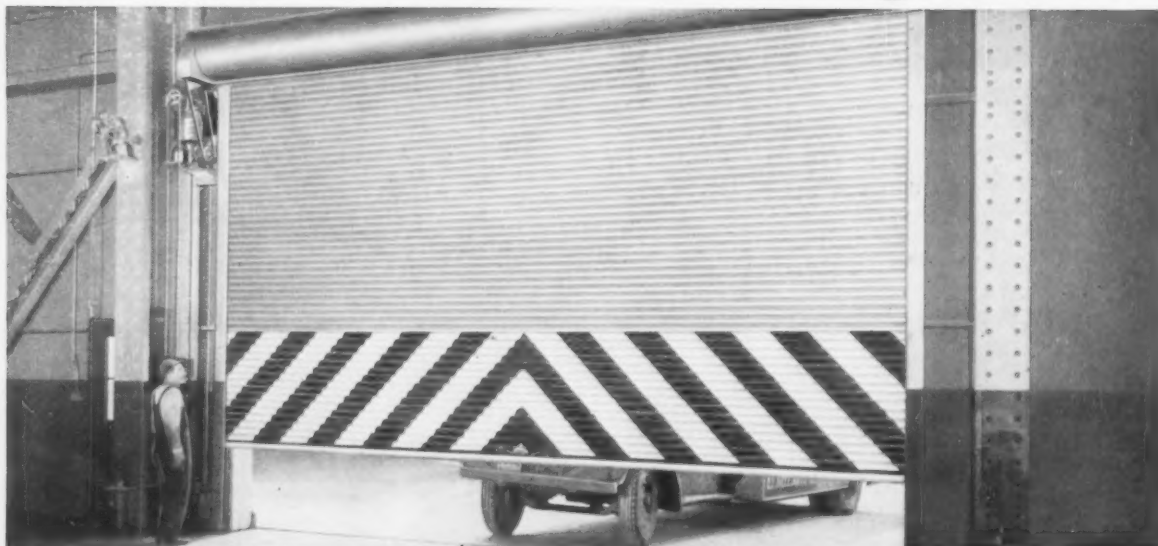
"Decline in demand for capital goods." **E. T. McNally, President,** McNally Pittsburgh Mfg. Corp., Wellston, Ohio.

"Lack of mortgage money and



Quick Guide to
Kinnear Door
Versatility

Solve Every Door Need With **Kinnear** Steel Rolling Doors



Whether your door needs are standard or special, Kinnear Rolling Doors save time, cut costs and add protection more ways than any other type of closure.

You get these multiple advantages from the coiling action of Kinnear's interlocking steel-slat curtain (*originated by Kinnear*). These Kinnear advantages fit special needs *more different ways* than any other type of door. For example, sketches show:

1. Mounted on inside wall; coils above doorway.
2. On outside wall; leaves ceiling clear.
3. Hood under lintel or concealed in wall.
4. Hood above lintel or on top of wall.
5. Hood above roof or upper floor level.

6. Horizontal mounting (openings for observatory, ventilator or similar eqpt).
7. Sloping doorway (chutes, hoppers, etc).
8. Inverted mounting (coil below door sill).
9. Kinnear Steel Rolling Fire Doors on either side of wall — or a service door and a Kinnear Steel Rolling Grille (all-steel protection that doesn't block light, air or vision).

No matter how they're installed, Kinnear Rolling Doors open completely out of the

way . . . need no usable, floor, wall, or ceiling space for either storage or operation . . . give you extra all-metal protection against fire, theft, wind, weather, or vandalism. Built any size; motor or manual operation; for old or new construction. Extra-heavy galvanizing assures lasting resistance to corrosion, Kinnear's special Paint Bond brings quick, thorough coverage and lasting adhesion of any paint you may apply. *Write for full information on Kinnear Rolling Doors to fit your needs!*

KINNEAR
ROLLING DOORS
Saving Ways in Doorways

The KINNEAR Mfg. Co.
FACTORIES:

1760-80 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

Construction

Continued

high cost of building has slowed down demand for construction machinery." **J. Ross Castendyck, President,** Challenge Mfg. Co., Los Angeles.

"Purchasers of heavy construction machinery are hurting for operating capital. Highway contractors in particular will need construction machinery to keep their planned program if their own working capital is absorbed by expanding overhead. They appear to need equipment-purchasing capital spread over a longer period of time than most banking institutions care to give. Some solution must be found." **Edward H. Holt, Vice President — Dir. Sales,** Barber-Greene Co., Aurora, Ill.

"Complete revision of designs for better products." **H. W. Botten, President,** The Owen Bucket Co., Cleveland.

"Reason for our increase is the introduction of new product. No radical new technical development or marketing problem anticipated." **E. G. Taussig, Sales Manager,** N. P. Nelson Iron Works, Clifton, N. J.

"Housing construction."

"Invariably the use of electronics will play a more important part, just as hydraulics took the place of gears and belts several years ago." **Norman A. Dunn, President,** W. E. Dunn Mfg. Co., Holland, Mich.

"There will be business but it will be a lot more competitive than any time since 1940." **D. G. McIntyre, Vice President,** Skagit Steel & Iron Works, Sedro-Wooley, Wash.

"National road building program." **D. D. Barnes, President,** Smith Engineering Works, Milwaukee, Wis.

"Labor saving equipment—lower production costs."

"Lack of added construction program." **G. P. Towle, President,** Sturtevant Mill Co., Boston.

"The most important technical development we have for 1958 is our expectation to start into the manufacture of silicon rectifiers or semi-conductors." **D. G. Black, Vice President-Sales,** Syntrol Co., Homer City, Pa.

"Improved products and services." **G. I. Wilmot, Gen. Mgr.,**

Wilmot Engineering Co., Hazleton, Pa.

"Difficulty in financing dealer stocks. Increase in competitive pressures. Higher costs in engineering and selling."

"Adjustment year relative to labor. Labor (unionism) control laws necessary. Marketing problems due to senseless extension of credit. Inflation curtailment necessary."



HANSEN QUICK-CONNECTIVE TWO-WAY SHUT-OFF COUPLINGS

Both ends of line are positively sealed when you disconnect a Hansen Series HK Two-Way Shut-Off Coupling. To connect, just pull back sleeve and push Plug into Socket. To disconnect, merely pull back sleeve. No tools required. Identical valves in Socket and Plug permit free flow of gas or liquid when Coupling is connected—practically eliminate spilling of liquid or escape of gas when disconnected.

WRITE FOR THE HANSEN CATALOG

Here's an always ready reference when you want information on couplings in a hurry. Lists complete range of sizes of Hansen One-Way Shut-Off, Two-Way Shut-Off, and Straight-Through Couplings—including Special Service Couplings for Steam, Oxygen, Acetylene, etc.



1958 National Plant Maintenance & Engineering Show—Booth No. 1027

SINCE 1915



Representatives in Principal Cities
QUICK-CONNECTIVE FLUID LINE COUPLINGS

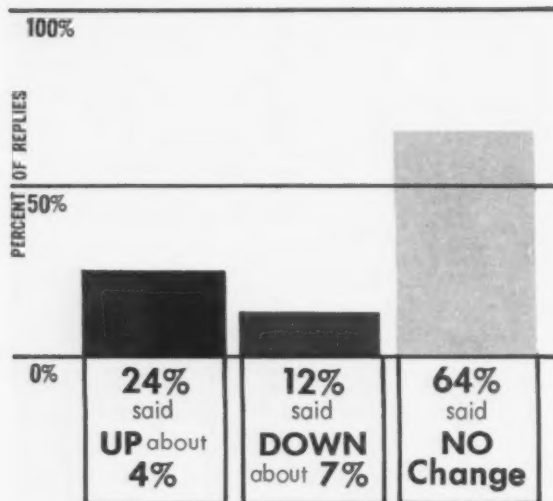
THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 11, OHIO

Conveyor Makers See Squeeze

SELLING PRICES

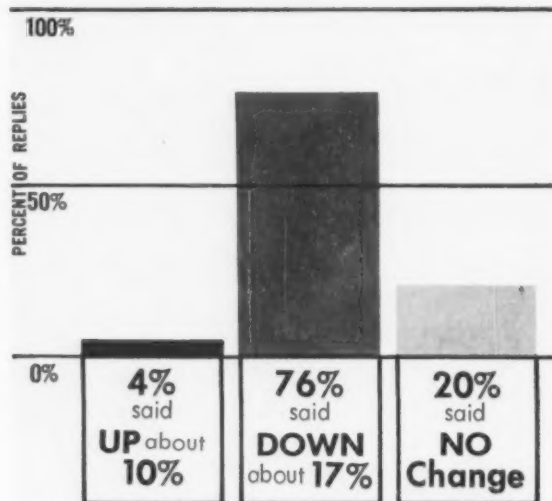
What's the trend?



PROFITS

SIC 3563

How will they compare with '57?



Lower profits are forecast by makers of conveyors, cranes and hoists for this year.

Reasons include a hold the line policy on prices in face of higher wages, lower sales.

Order backlogs are off 31 pct—from 127 days to 87 days in the past year.

■ A further squeeze on profits faces manufacturers of conveyors, cranes and hoists in 1958. A 76-pct majority of the reporting firms in this industry said profits will be down an average of 4 pct this year. Twenty percent look for no change and only 4 pct predict higher profits of about 10 pct.

It's not too difficult to understand the concern about profits by makers of conveyors, cranes and hoists.

While they expect wage increases comparable to the rest of the industries surveyed, their sales volume and selling prices are somewhat below overall reports.

Few See Sales Rise—While 28 pct of all companies expect sales to top last year's figures by 10 pct, only 11 pct of the manufacturers of conveyors, cranes and hoists see a rise of 13 pct in 1958. Fifty percent of these executives expect sales volume to fall off 17 pct as compared with a 15-pct drop predicted by 32 pct of all those queried.

Selling prices of conveyors, cranes and hoists will be kept pretty much in line with those of 1957. As one source reports, the problem will be to hold prices at present levels while absorbing wage boosts.

Set Pattern—This pretty much seems to be the pattern. Sixty-four

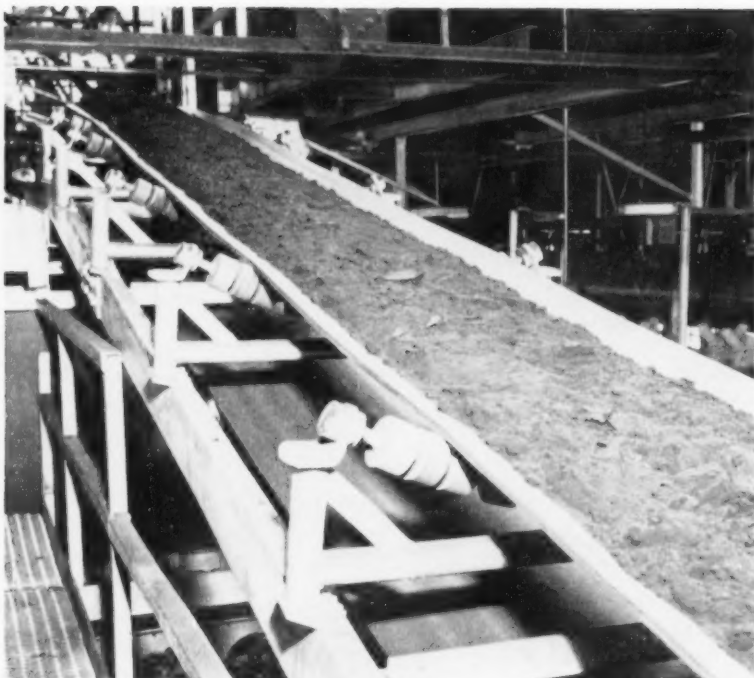
percent of these material handling equipment makers see no change in selling prices this year. Twelve percent see them dropping by 7 pct and another 24 pct predict a 4-pct increase.

Backlogs for the industry fell to 87 days at the end of the year as compared with 127 days at the start of 1957. This 31-pct decline is less than the average reported for most industries.

Raw materials backlogs were cut below year-end 1956 by 57 pct of these companies. And finished goods inventories below the start of 1957 were reported by 39 pct. Higher inventories of raw materials and finished goods were claimed by 22 and 33 pct at the end of 1957.

These inventory and backlog figures were weighted by the number of employees in companies answering the questionnaire.

On '58 Profits



Joy Mfg. Co. photo

SIC 3563

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	44%	35%
100 to 249	28%	31%
250 and over	28%	34%

Industry executives say:

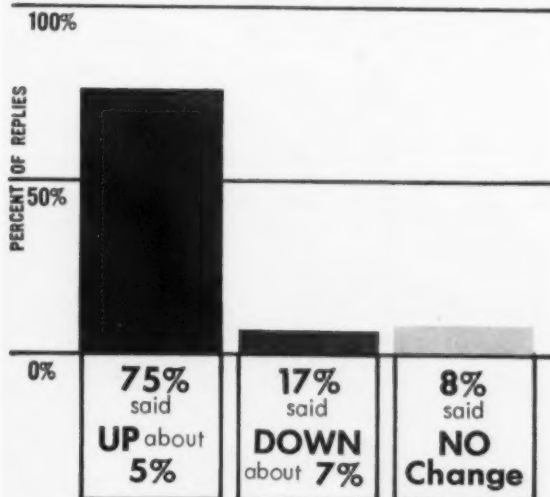
Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"The application of electronic control to material flow on conveyors will broaden the market for our equipment. Marketing management will promote 'Technics' as an industry wide need in the recognition of ways to solve material handling problems." **E. L. Hummel, Treasurer, The Rapids-Standard Co., Inc., Grand Rapids, Mich.**

"Improvement in coal production. Use of larger bulk carrying sea go-

WAGE COSTS

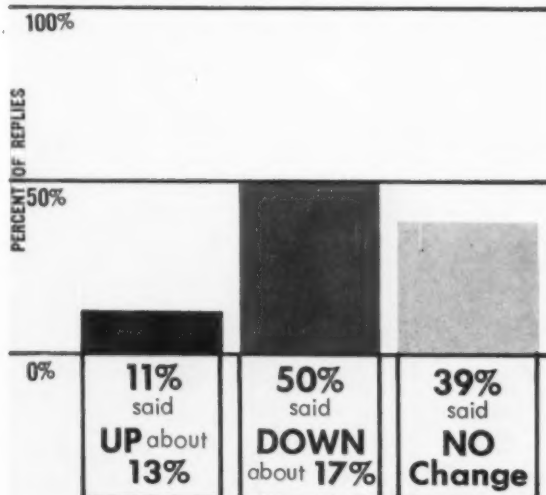
How much, if any, will wage costs increase?

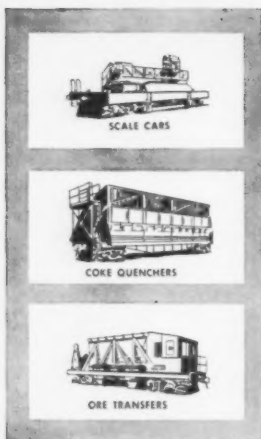


SALES VOLUME

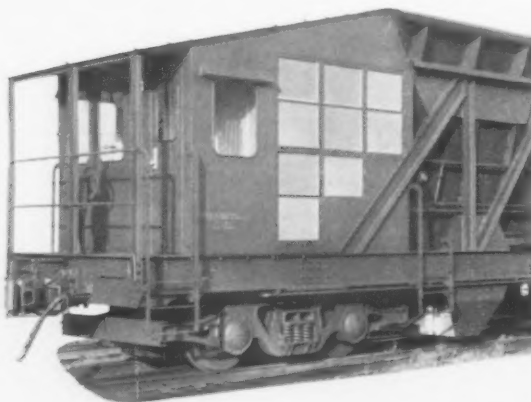
SIC 3563

How will it compare with '57?





sixty years of
car building progress
with an international
reputation for
quality



75 TON DIESEL ELECTRIC ORE TRANSFER

Each car Atlas builds is
engineered to specific task
performance . . . and designed
for personnel safety.



ATLAS

CAR & MFG. CO.
1100 IVANHOE ROAD,
CLEVELAND 10, OHIO

Conveyors, Hoists

Continued

ing ships beyond present sizes." **Harry R. Edelman, Jr., President,** Heyl & Patterson, Inc., Pittsburgh.

"Marketing problem—price competition." **Austin Goodyear, Executive Vice President,** Hewitt-Robins, Inc., Stamford, Conn.

"Automotive restyling, new engine programs, new products, renewed optimistic spending for cost saving equipment. Relaxing of budget reserves." **R. C. Becker, Sales Manager,** Wilson Automation Co., Detroit, Mich.

"Our greatest problem will be to hold prices at somewhere near present level against raising labor costs as we feel we will be unable to sell our products at higher prices than what they are now." **Joseph Corrigan, President,** J. C. Corrigan Co., Boston, Mass.

"Price cutting caused by fear and trying to make sure that 'demon,' overhead is fed." **O. A. Johnson, President,** Gifford-Wood Co., Hudson, N. Y.

"The development and perfection (relative) of new products."

"Technical development, up — marketing problem, more competitive."

"While it is still too early to give you a positive answer, we feel that a real speedup in the missile program could very definitely affect our special hoisting machinery sales.

"Defense spending, direct and indirect, as it affects the West Coast.

"We have been making a fairly high percentage of our sales in the new plant expansion area. With this prospect much dimmer we feel we'll have to sell harder.

"Salesmen must be trained to spot places where conveyors can do a job that is not now being done efficiently."

EFFICIENCY

The 450 ton portable ingot stripper by PITTSBURGH permits the use of overhead cranes with maximum *efficiency*. The crane is free for other work when the stripper is not in use.

Efficient operation is the primary object in the design and construction of all products produced by Pittsburgh Engineering & Machine Company.

We welcome the opportunity to consult with you on your requirements for mills and auxiliary equipment.



Pittsburgh
ENGINEERING
& MACHINE CO.

P. O. BOX 986, PITTSBURGH 30, PENNSYLVANIA
PLANT AT GLASSPORT, PENNSYLVANIA

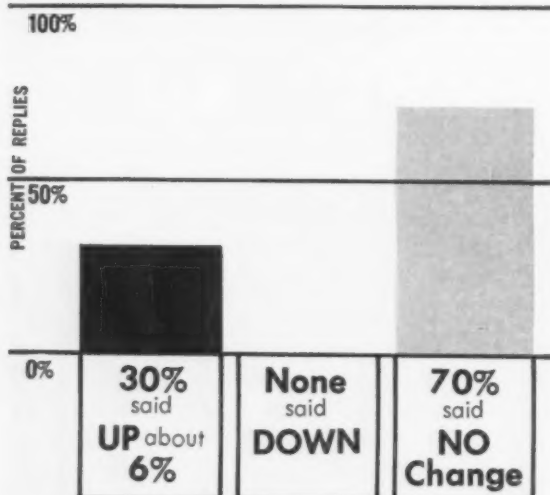
Division of Pittsburgh Steel Foundry Corporation

"Electric and Open Hearth Steel Castings from 1 lb. to 100 tons"

Nation's Brass Mills Expect 1958

SELLING PRICES

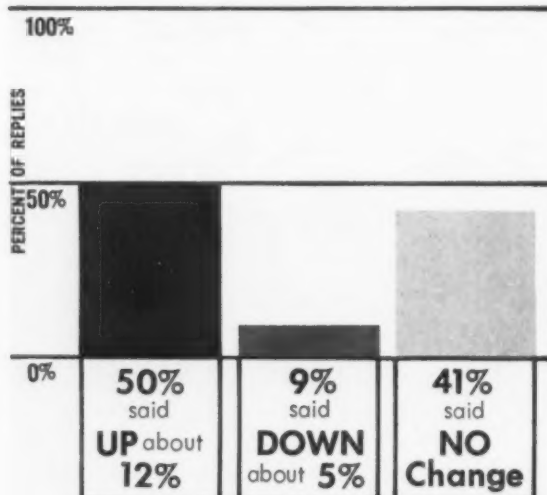
What's the trend?



PROFITS

SIC 3351

How will they compare with '57?



Survey shows both big and small producers expect the tide to turn this year. But competition will remain stiff.

Higher selling prices may be ahead, along with rising sales curve. Half of industry expects better profits despite threat of rising labor costs.

After a rather rough year, the nation's brass mills are looking forward to a better one. Customers who have been living off inventory are expected to come back into the market. At current copper prices, this makes sense.

Replies to The IRON AGE survey of the copper and brass rolling industry came from companies with 69 pct of the total employment of that industry.

The survey results point upward,

as might be expected. None of the respondents expect prices to turn soft this year. While 30 pct believe prices may go up by an average of 6 pct, the balance don't expect any change in their selling prices.

Profits Picture Looks Better— Half the respondents said profits should be up by an average of 12 pct; only 9 pct expect a drop of 5 pct. The remaining 41 pct feel they will hold at about the 1957 level.

Wage costs will move up, say 91 pct of the respondents; and they fear the figure will average about 5 pct. Only 9 pct see no change likely in the wage cost area.

A third of those replying expect sales volume to increase by about 12 pct; 9 pct expect a 5-pct drop and 58 pct said "No change."

Estimates on wages, profits, sales volume and prices are individual

replies, with no weighting for company size.

Data on backlogs and inventories were also compiled in the survey. These data are weighted by company size.

Backlog Dip Mild — Weighted backlogs for the industry as a whole were about 17 days' production at the end of 1956. For the end of 1957 they were estimated at 12 days, a 30-pct drop.

In raw materials, the industry is about 50-50 split between an inventory equal to what it was a year ago, or below it. None reported higher raw materials inventories at the end of 1957.

Finished goods inventories are below what they were at the end of 1956 in 76 pct of the industry. They are about the same in 3 pct, and above the year-ago level in 21 pct of the industry.

to Top 1957 Levels

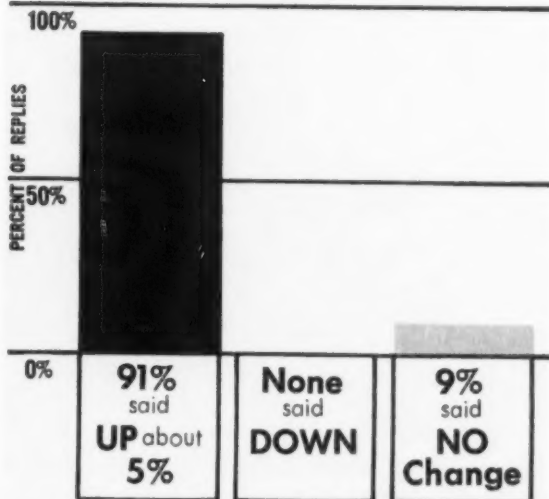
SIC 3351

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 249	39%	20%
250 to 999	40%	60%
1000 and over	21%	20%

WAGE COSTS

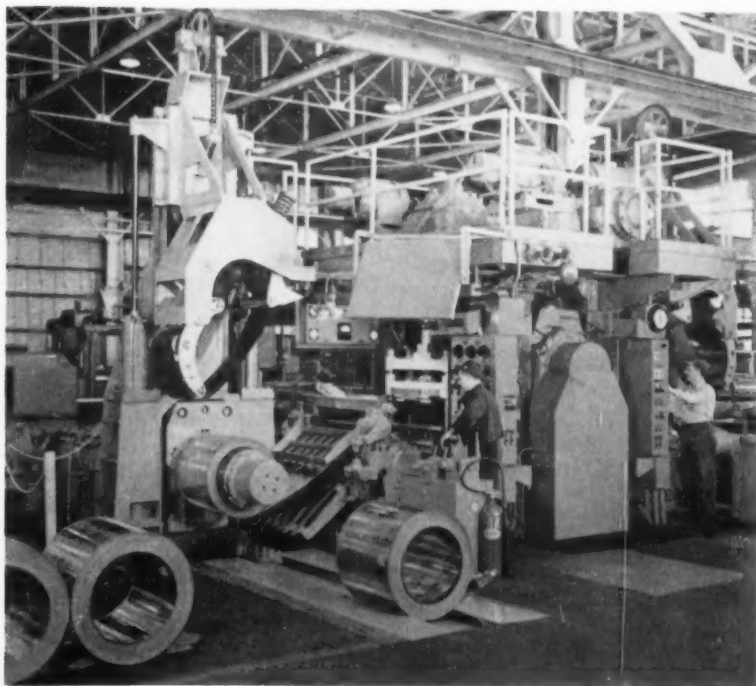
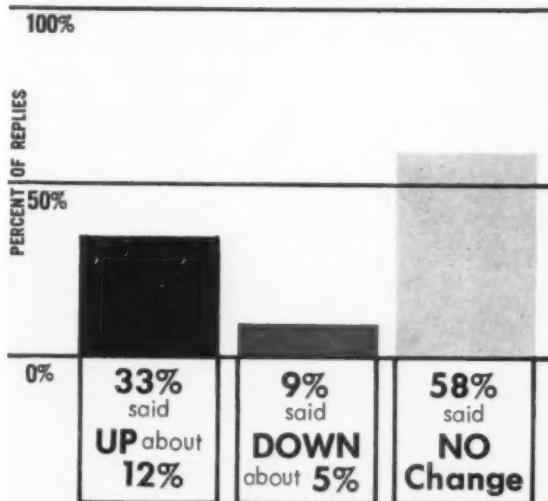
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3351

How will it compare with '57?



American Brass Co. photo

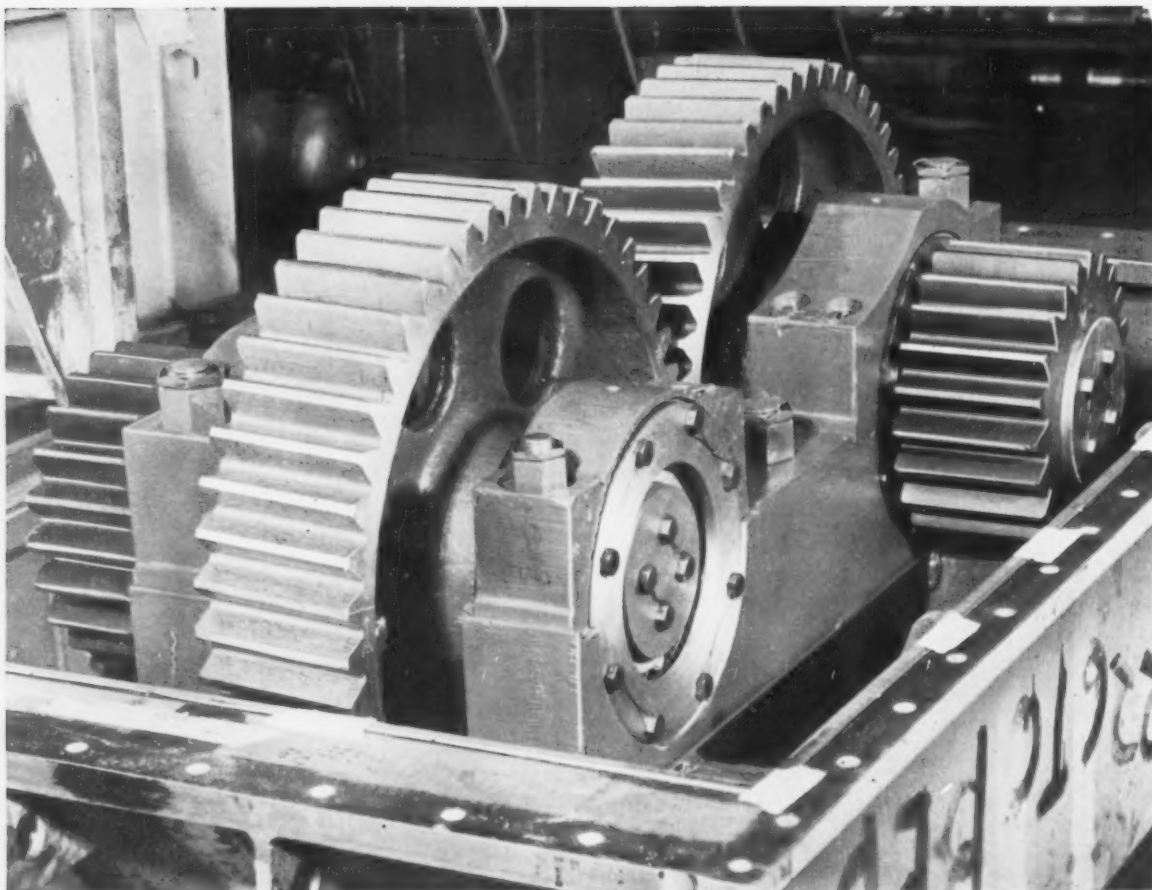
Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Competition from aluminum and stainless steel will continue in 1958 to be the major marketing problem facing the brass mill industry."
Pierce M. Welpton, President,
Bridgeport Rolling Mills Co., Stratford, Conn.

"The serious impact of imports threatens a further decline in volume for domestic fabrication."

"Volume of sales will depend on the activity of the automotive in-



Bliss Specifies Ductile Cast Iron Gears for presses used to form sheet steel for the auto industry. Bliss

uses ductile cast iron for at least 10 other parts in top drive presses — 16 in under drive presses.

Ductile cast iron gears prove their economy in Bliss metal-working presses

The gears, illustrated above, are typical of the many ductile cast iron gears used by E. W. Bliss Co. of Canton, Ohio, for their heavy metal-working presses.

For 30" to 108" gears, ductile iron has provided outstanding service. It gives Bliss the best combination of properties: high strength, good castability, good wear resistance and excellent machinability. All this at moderate cost.

In this gear application, 80-60-03 grade ductile provides a yield strength of 60,000 psi — more than enough to meet the stresses developed in producing 300- to 4000-ton platen loads.

These ductile iron gears — heat-treated to 208 Brinell — work well with the 8640 (Ni-Cr-Mo) pinions, assuring top-notch wear resistance. Bliss reports, *"not a single ductile iron gear replaced since ductile iron was first specified."*

Take advantage of the economy of ductile cast iron for your equipment. For many applications — cylinders, pressure vessels, pistons and the like — ductile iron outperforms conventional materials. Cuts production time. Behaves better in the shop. Saves time and money.

For complete information write for "Ductile Iron — the Cast Iron that Can Be Bent."



ductile iron . . . the cast iron that can be twisted and bent

The INTERNATIONAL NICKEL COMPANY, Inc.
67 Wall Street, New York 5, N. Y.

Copper, Brass

Continued

dustry." **Thomas I. S. Boak, President**, The Piume & Atwood Mfg. Co., Thomaston, Conn.

"Defense program cutbacks will affect our guided missile, aluminum extrusion and forging business, if new schedules are long delayed."

Herman W. Steinkraus, President, Bridgeport Brass Co., Bridgeport, Conn.

"Supply of most brass and copper affect our guided missile, aluminum tending to continue the spirited competition of 1955-1956." **Fred L. Riffin, Sr., President**, Mueller Brass Co., Port Huron, Mich.

"We look for a good year in 1958. We expect some buildup in our customers' inventories because the price of copper is down. During the past year they have been liquidating inventories; the change should bring some pickup in this area.

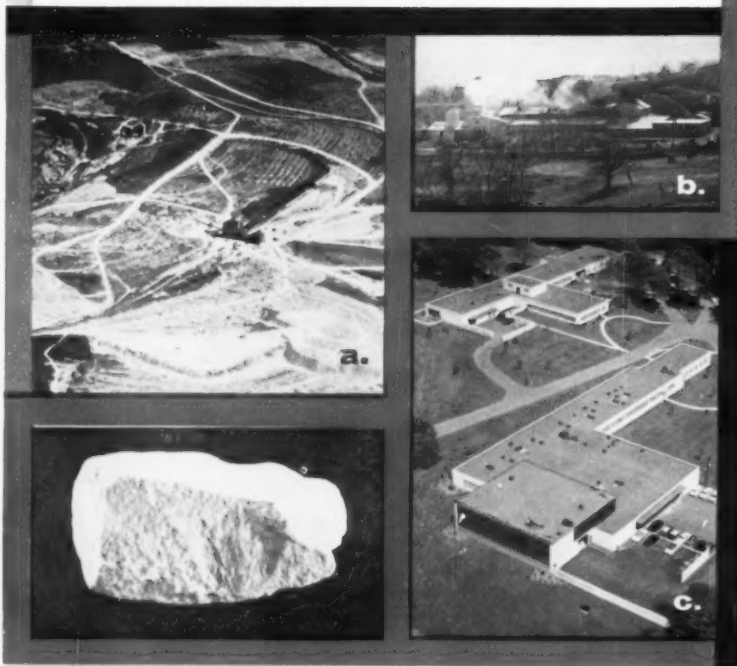
"If you read the paper and say 'Things are slow and there's not much we can do about it, things will be slow.' But we tell our salesmen that people are buying brass every day and we want part of that business. We're getting some too."



"Never mind, Frank. I'll take the money to the bank myself."

THE IRON AGE, January 2, 1958

Chemstone earns its place as your fluxstone supplier



Steel is big . . . and suppliers of commodities to steel must be big, too. Chemstone's operations meet these requirements from three all-important standpoints:

- a. THREE QUARRIES**—the one shown above is 3,000 acres of purest limestone strata.
- b. PLANTS**—Strategically-located, high-capacity, modern facilities . . . an integrated plant-rail-dock-boat network . . . the kind of operation you can count on for fast, sure, on-schedule deliveries.
- c. RESEARCH CENTER**—where unceasing work goes on in the metallurgical application of fluxing limestones.

Chemstone—and its parent company—Minerals & Chemicals Corporation of America is geared to give steelmakers full service. We invite your inquiry.

WORLD'S LARGEST
NON-CAPTIVE
FLUXSTONE
PRODUCER

Chemstone
CORPORATION

LEADER BUILDING, CLEVELAND 14, OHIO



a subsidiary of

MINERALS & CHEMICALS
CORPORATION OF AMERICA

Pittsburgh, Pa. Representative:
NEVILLE LIME COMPANY
Oliver Building

Defense, Autos Shape Market

The market for cutting tools and gages will be paced by automotive and appliance needs.

Changing defense needs could also play a large part, if translated into immediate production requirements.

Easing of tight money situation might free more tool orders.

■ The 1958 market for cutting tools and gages is faced with three big "ifs." If the automotive and appliance industries make a good showing and if changing defense needs are immediately translated into demand for new tooling, the industry can have a good year.

But as yet none of these markets have proven themselves. Backlogs for the industry (weighted on the basis of the number of employees

of companies answering this survey) average about 54 days. This is a decline of 31 pct from the 74-day backlog reported for the same time last year.

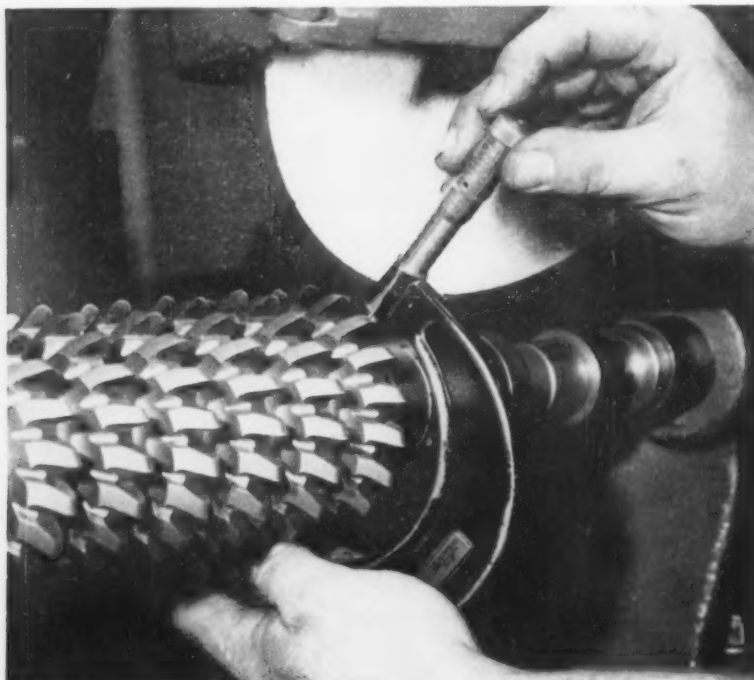
Free Money Would Help—For cutting tool and gage makers this means a harder battle for business, a need to closely scrutinize costs and the ability to quote better delivery times. One big cost factor facing the industry this year is the reopening of labor contracts with the UAW—C.I.O.

Another worry facing makers of cutting tools and gages is the general tightening up of the money market with its retarding effect on sales of the machine tool industry. A freer money situation in 1958 might bring more tool buyers into the market this year — and with them more orders for cutting tools and gages.

Cut Inventories—Based on the present market outlook 17 pct of the executives surveyed in the cutting tool and gage industry predict a 9-pct higher sales volume next year; 31 pct look for a drop of about 21 pct; and 52 pct see not much of a change from last year's volume.

Sixteen percent of the executives in this industry report that profits in 1958 will go up about 5 pct. Another 42 pct see them dropping some 33 pct while 42 pct say they will remain about the same.

As in most other industries reported on in this survey, makers of cutting tools and gages make some inventory reductions last year. On the basis of weighted inventory figures, 31 pct report raw materials lower than the same time last year; 32 pct said they were about the same and 37 pct were higher than a year ago.



Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"The technical development in the wetting (electric) of beryllium and steels for producing cavities for plastic molds and die-casting die cavities." **L. B. Kavanagh, President, Standard Tools Co., Leominster, Mass.**

"Continuous decrease in promised delivery time, status quo in pricing rather than price increases to equal increased costs, ever increasing

For Cutting Tools

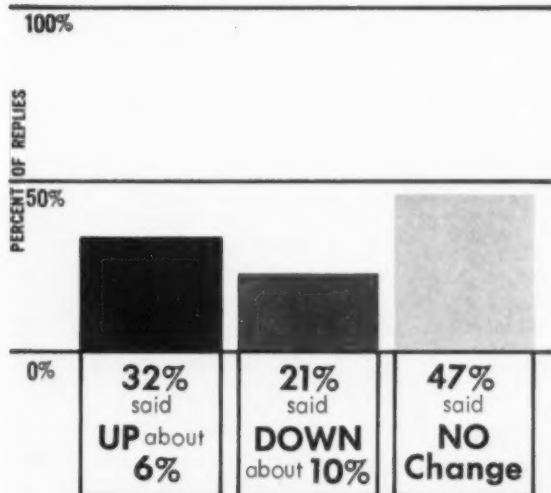
SIC 3543

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
100 to 249	69%	66%
250 and over	31%	34%

SELLING PRICES

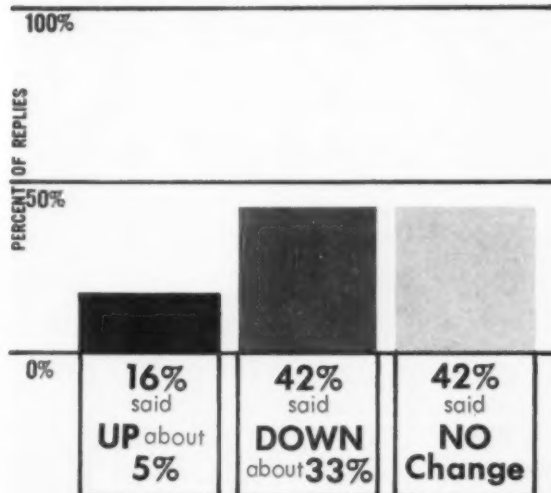
What's the trend?



PROFITS

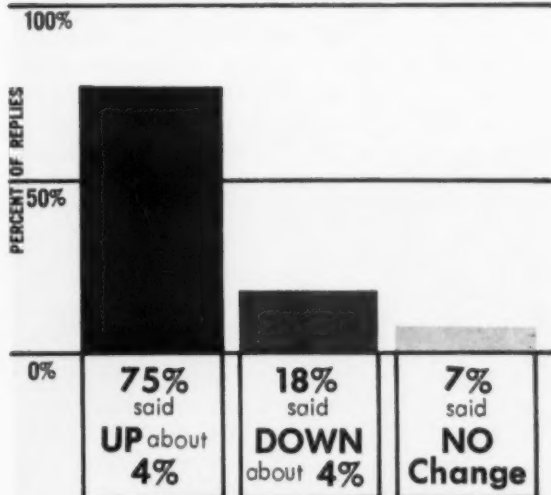
SIC 3543

How will they compare with '57?



WAGE COSTS

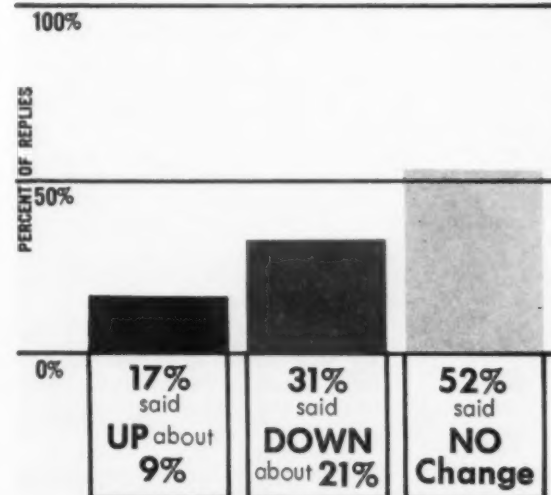
How much, if any, will wage costs increase?

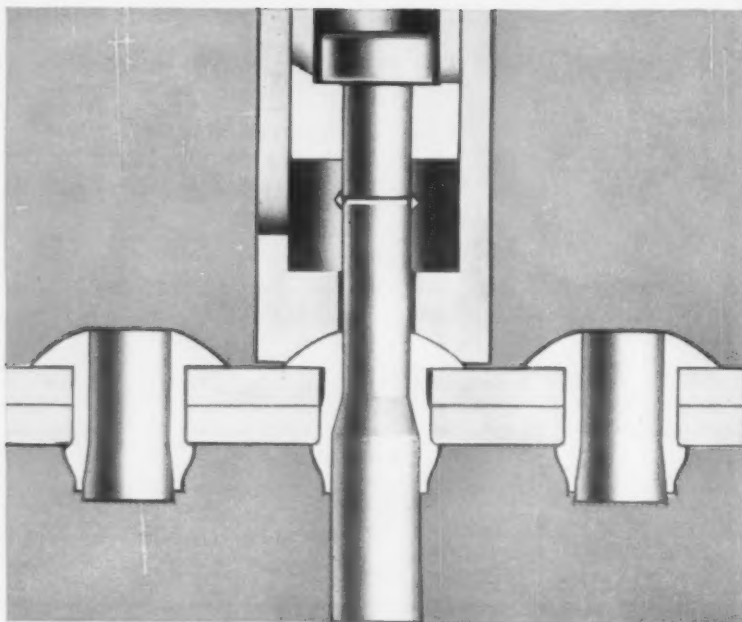


SALES VOLUME

SIC 3543

How will it compare with '57?





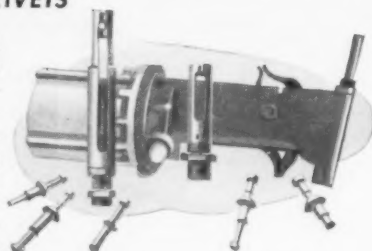
More than a Fastener . . .

A FASTENING SYSTEM

CHERRY RIVETS • VERSA RIVETS

Townsend has engineered blind rivets and setting tools to create a simple, and therefore, economical fastening system. The patented knob stem of the rivet engages a pulling head in the gun which sets the rivet. This head has only two parts, and the rivet is set with a single squeeze of the gun trigger. Engagement of the knob stem is positive and quick even for operators without any special skills.

Pulling heads are extremely durable. The fit between draw-bolt and sleeve is comparatively free, so that wear is slight and tools can be used in the presence of dirt and grit with little danger of clogging. Uninterrupted production, long wear, and negligible maintenance are assured by this simple, sturdy design; and initial tooling costs are low.



Townsend knob stem blind rivets are available in a wide range of sizes and materials in both self-plugging and pull-thru types. Hand, air and electric powered tools can be supplied to meet any production conditions. For full details on the economical Townsend blind rivet system, ask for a demonstration or for Bulletin TL124. Townsend Company, P. O. Box 237-B, New Brighton, Pennsylvania.

The Fastening Authority

Townsend

COMPANY • ESTABLISHED 1816

NEW BRIGHTON, PENNSYLVANIA

Sales Offices in Principal Cities

Cherry Rivet Division • Santa Ana, California

In Canada: Parmenter & Bulloch Manufacturing Company, Limited, Gananoque, Ontario

Tools and Gages

Continued

labor costs and increase of fringes." **D. F. Morse, Vice President and General Manager, Gairing Tool Co., Detroit.**

"What the hard goods industries do, especially automotive, will have a tremendous effect on our tool and die industry, which is low at the present time. Also any radical change in the armament program will have the same effect." **Karl Harig, President, Harig Mfg. Corp., Chicago.**

"The pressure of lower volume of business and high costs will make it imperative that metalworking companies utilize every idea available i. e. quick change and pre-set tools, in order to meet competition and retain any semblance of profit." **H. D. Long, President, Scully-Jones & Co., Chicago.**

"Technical: Close manufacturing tolerances; more efficient products. Marketing: Shorter deliveries. Buyer's market." **Harold Brown, President and Treasurer, Reynolds Engineering Co., Rock Island, Ill.**

"Because of the improved quality of cutting tool materials, the user now obtains more work per dollar spent for cutting tools. Thus, many of the cutting tool material manufacturers, who already have excessive productive capacity, will be hard pressed to market during 1958 a volume equal to that marketed in 1957." **Frank H. Driggs, President, Vascalo Ramet Corp., Waukegan, Ill.**

"New labor contract with U.A.W.-C.I.O." **Don J. Buell, President, Buell Die & Machine Co., Detroit.**

"Closer contacts with potential outlets. New tools and instruments for ourselves. Intensified selling. Everlasting attention to reducing production costs in the face of increasing fixed charges."



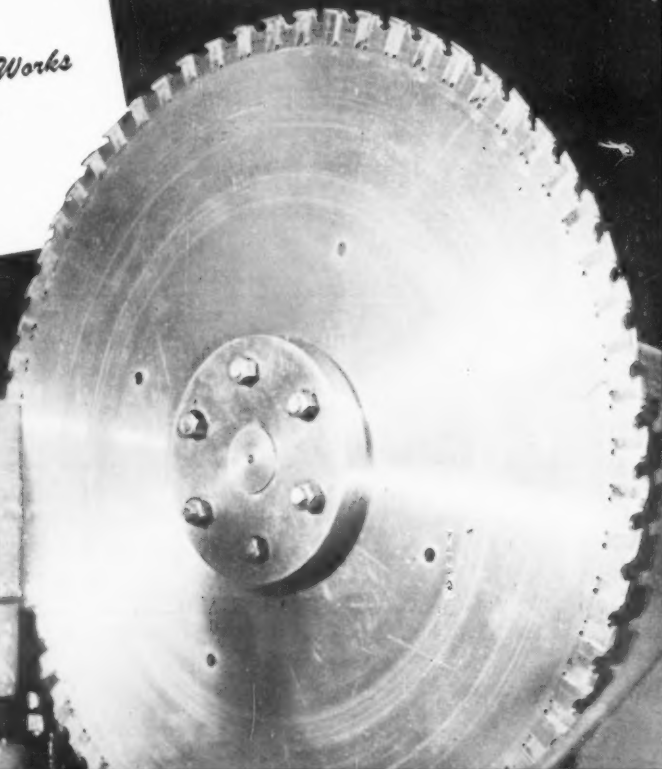
Saves Time... Cuts Costs

Rotary Planer . . . do milling jobs in one-third to one-seventh of time on an Espen-Lucas Rotary Planer.

Big Sawing . . . production cutting of large stock—rapid, easy, straight-to-a-line piece after piece—on Espen-Lucas Cold Sawing Machines.

The **ESPEN-LUCAS** *Machine Works*
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• HEAVY TYPES OF SPECIAL MACHINERY



Appliances, Defense Play Role

Motors and controls industry is among most stable of those surveyed. Still has good backlogs, has cut raw material and finished goods inventories.

Capital spending slowdown will hurt, will be partly offset by gains in housing, appliances and defense.

■ The electric motors and controls you buy this year will cost just a bit more than they did in 1957. Most of the companies in this field anticipate higher wage costs. The sales outlook is not clearcut; competition is stiff. The result: for many in the industry a profit squeeze.

For producers of motors and controls the outlook on the plant expansion front is not as cheery as it was a year ago. Offsetting this, at

least to some extent, is the coming increase in defense spending.

Brighter prospects for housing starts and in household appliances should also tend to improve the picture on smaller unit sales. And in the controls field, missile developments are expected to be a stimulant.

Backlogs Off 17 Pct — On balance, the industry is doing fairly well. Its backlogs are off about 17 pct from the 3-month level of a year ago to about 2½ months right now. This is among the smallest backlog declines of the 17 industries surveyed.

In line with the general trend, makers of motors and controls have reduced both raw materials and finished goods inventories to levels below what they were a year ago. More than half (57 pct) report raw mate-

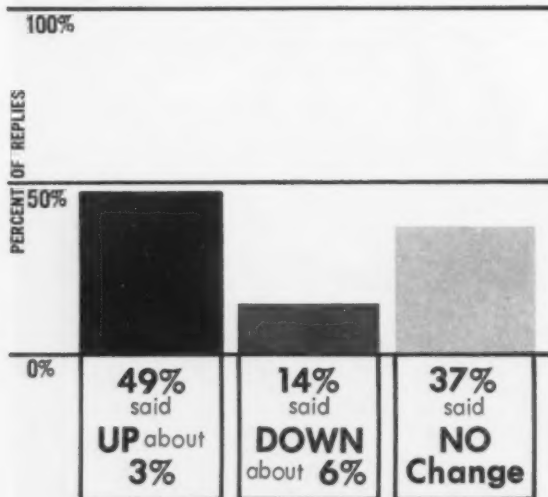
rial inventories down; 41 pct say finished goods stocks are down too. Only 19 and 23 pct, respectively, have raw material and finished inventories above last year.

Fewer Peaks, Valleys—The four charts on these pages show less variations from the 1957 pattern than the other metalworking industries surveyed. Selling prices, according to 49 pct of respondents, will probably go up about 3 pct. Roughly the same percentage looks for a sales increase of about 6 pct.

The box at the upper right, "Percent of Replies by Plant Size," shows how those answering the questionnaire compare with actual plant employment in this industry. Charts on these pages are unweighted individual replies; backlog and inventory data are weighted by company size.

SELLING PRICES

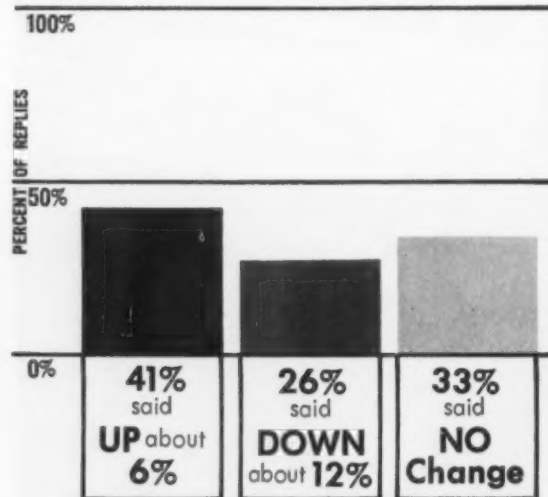
What's the trend?



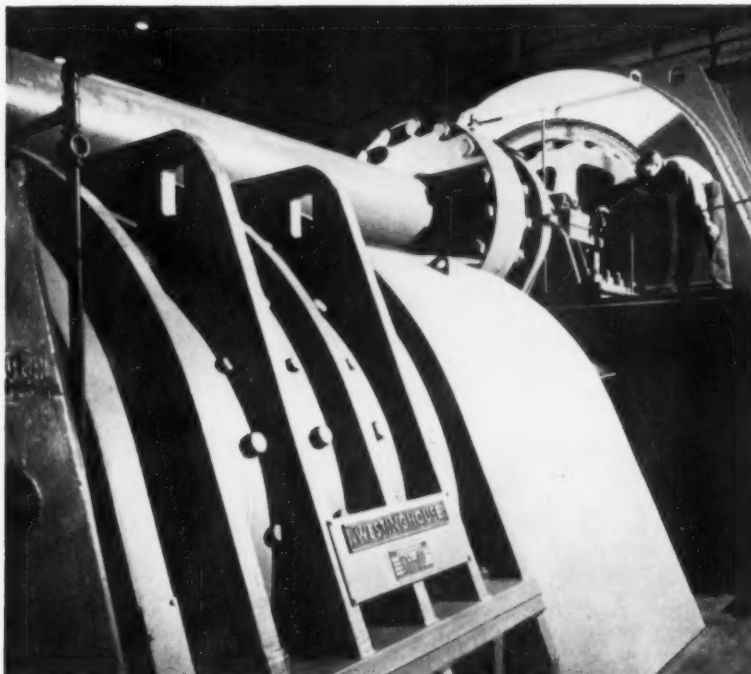
PROFITS

SIC 3614 & 6

How will they compare with '57?



in Electrical Outlook



Westinghouse photo

SIC 3614 & 6

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	26%	27%
100 to 499	46%	42%
500 and over	28%	31%

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Development of new products."
R. G. Schrock, President, Euclid Electric & Mfg. Co., Madison, Ohio.

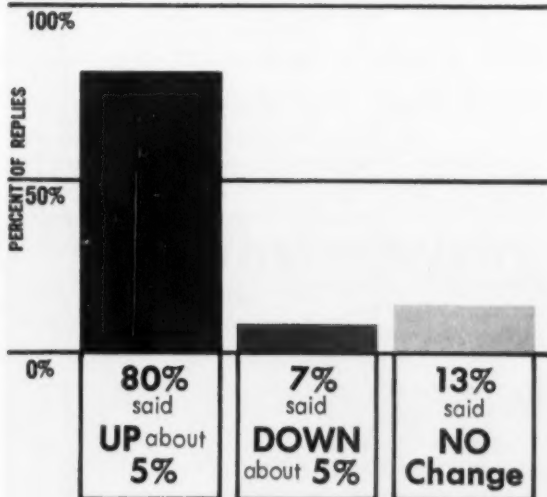
"New tooling and automation."
Arnt Olsen, President Olsen Machine & Tool Co., Inc., No. Abington, Mass.

"The development and use of static controls."
H. C. Curtis, President, Curtis Development & Mfg. Co., Milwaukee, Wisc.

"Our sales volume will largely

WAGE COSTS

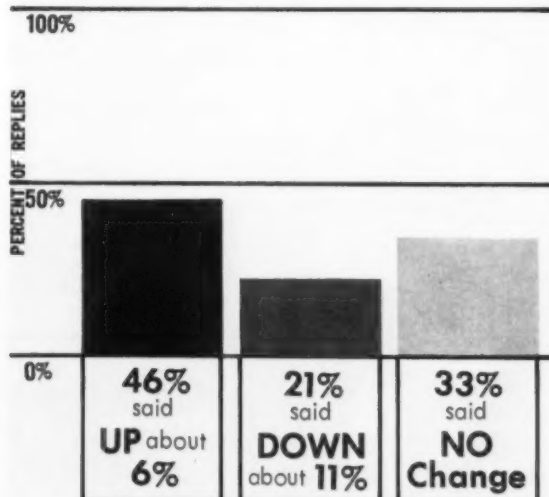
How much, if any, will wage costs increase?



SALES VOLUME

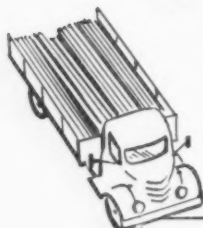
SIC 3614
& 6

How will it compare with '57?

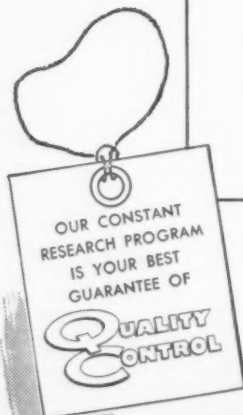




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Motors and Controls

Continued

depend on the trend of 'Heavy Industry' for year 1958." **W. A. Everson, President**, Everson Electric Co., Allentown, Pa.

"We feel that with the recent developments in the missile field that business people will reverse their pessimistic outlook on business to a slightly higher and more careful spending program."

"Use of gear motors and speed reducers as components for original equipment units tends to limit total industry sales to the fortunes or misfortunes of other manufacturers rather than that of the consumer." **G. H. Turner, Executive Vice President**, Janette Electric Mfg. Co., Morton Grove, Ill.

"Modernization of research, development and production facilities." **A. H. Blanc, President**, Sorenson & Co., Inc., Stamford, Conn.

"Use of transistors and other components in our present electro-mechanical devices."

"A change from aircraft to missile construction will increase building construction and thus our business prospects in one phase. Other industrial capital improvements will be down about 30 pct over 1957, we believe." **W. Zinsmeyer, Secretary-Treasurer**, Zinsco Electric Products, Los Angeles 12, Calif.

"Changes in our sales department and production of a few larger sizes of our standard products." **O. A. Baumann, Sr., Treasurer**, Baldor Electric Co., St. Louis, Mo.

"Salesmen personnel." **R. R. Cook, President & Treasurer**, Small Motors, Inc. Chicago 14, Ill.

"Tendency to reduce as far as possible any manual effort at home or business level will increase the demand for electric motorization of any time or labor saving device."

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Imports Threaten '58 Fastener

More than one producer is worried about the impact of fastener imports on 1958 sales.

Imported prices are reported 35 to 50 pct below the domestic fastener market.

Weighted order backlogs have dropped from 44 to 31 days in the past year.

■ Imports of fasteners selling from 35 to 50 pct below domestic prices are a threat to 1958 sales volume according to several fastener manufacturers. Others say a levelling off of capital outlays will tend to make the market more competitive in 1958.

Automobile production, appliance sales, new housing starts and defense requirements will all play a large part in making the 1958

fastener market. If they all have a good year fastener sales can expect to ride along with them.

Sales Hold Steady—For the present fastener sales look pretty much on the same plane as last year. Fifty-one percent of the fastener industry executives report sales volume will hit about the same level as last year. Twenty-six percent of them predict they'll go up 9 pct. And 23 pct say they'll drop about 8 pct. All in all, on the basis of these reports fastener sales should hold about steady with 1957.

Some firms look for a further reduction in inventories for the coming months. In the past year inventories of raw materials and finished goods dropped off, as in most other industries.

Of the companies reporting in the survey, 44 pct said their raw materials at year end were below

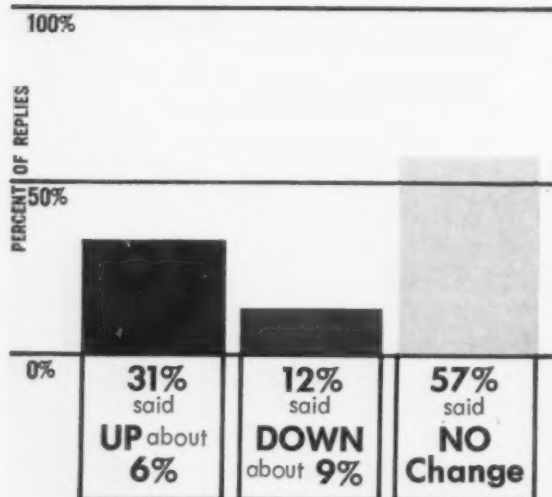
those at the beginning of 1957; 19 pct said they were about the same and 17 pct reported higher inventories. For finished goods in stock some 28 pct said they were lower at the end of 1957; 23 pct said they were about the same and 49 pct reported higher inventories.

Backlogs Down 30 Pct—Fastener order backlogs dropped from 44 days at the beginning of 1957 to 31 days at the start of this year—a decline of 30 pct. Inventory and backlog figures given here are weighted on the basis of employment of the responding companies.

Wages and profits for the fastener industry pretty much follow overall industry figures. Eighty percent expect wages to go up about 5 pct. Twenty percent look for a profit increase of 9 pct while another 46 pct predict a drop off around 11 pct.

SELLING PRICES

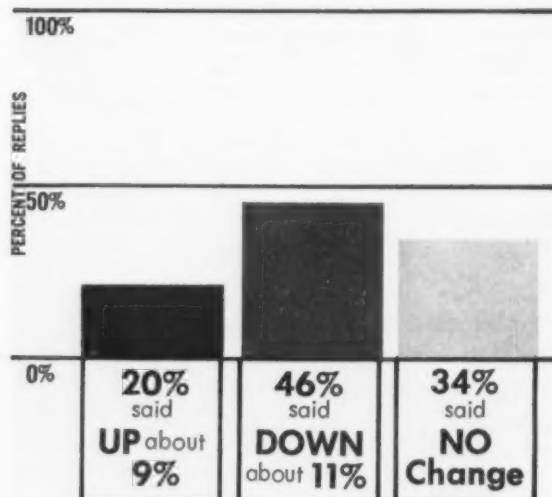
What's the trend?



PROFITS

SIC 3454

How will they compare with '57?



Sales Outlook

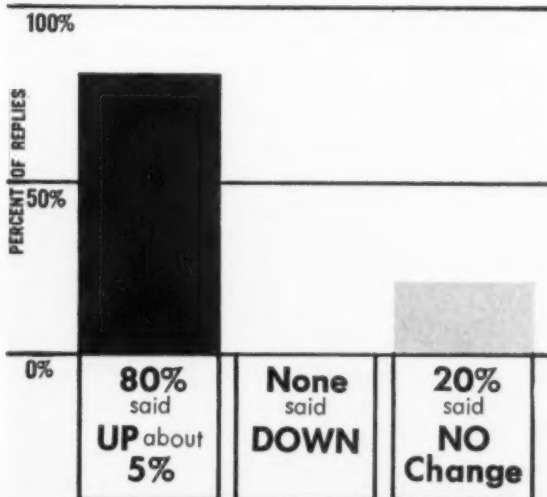
SIC 3494

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	42%	41%
100 to 249	33%	26%
250 and over	25%	33%

WAGE COSTS

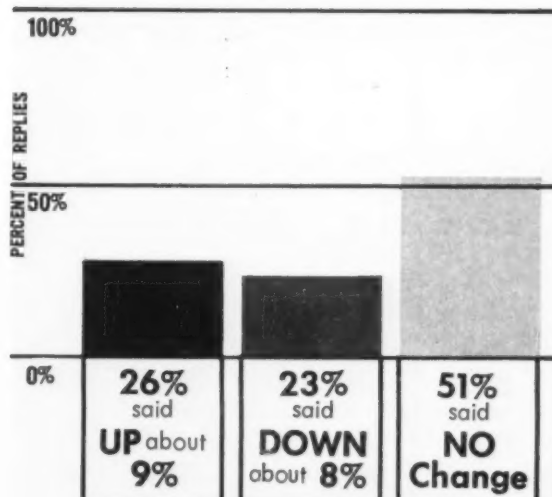
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3494

How will it compare with '57?



Russell, Burdall & Ward photo

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Constantly increasing imports of fasteners from Europe and Japan being sold to consumers in this country at prices below our cost to produce." **W. L. Stein, President,** American-Monarch Corp., Cleveland.

"Do not expect any great changes." **B. H. Miller, General Manager,** Turnbuckles, Inc., Michigan City, Ind.

"I believe inventories will be re-

Fasteners

Continued

duced for a few more months if steel consumption stays about the same. It would carry into 1958 and it could feed on itself downward but I doubt it."

"Some stabilization in prices must come."

"Acceptance and production use of our new high strength fastener 'Lockbolts.'" **F. R. Dickenson, President,** Townsend Co., New Brighton, Pa.

"A leveling off of capital outlays will tend to make the fastener market highly competitive. Accelerated rocket or missile activity, requiring construction of new and different manufacturing facilities, could bring about allocation of steel. If auto-

mobile production should decrease there will be unused capacity in some units of the industry. In the long run, increased use of adhesives could decrease requirements for certain types of screws. Price structure is soft, due to high level of competition, and could get more so." **H. E. Smith, Jr., Vice President and General Manager,** Vulcan Rivet & Bolt Corp., Birmingham.

"While it is neither a technical development nor a marketing problem, I feel that labor negotiations are going to have the most important effect on our industry—particularly the UAW automotive negotiations."

"Foreign imports."

"New production equipment and new models of rivet setting machines."

"Over-production on part of customers we supply. Too much unsold inventory." **D. E. Tripp, President,** Grip Nut Co., South Whitley, Ind.

"Wage costs will increase and steel probably will, too. It appears as though it would be difficult to recover these costs."

"Price pressures downward in the face of raising material and labor costs—increasing number of smaller firms founded in last few years—consolidation of companies a definite trend."

"In our own business the development of new products in one line will be the most important fact."

"The rate of automobile production will make or break our year in '58. Housing starts are another important factor."

"Technology is hard to pin down. New things will come out but they are not too dramatic in our industry. We plan to do a much better job of marketing in the entire concept of that word."

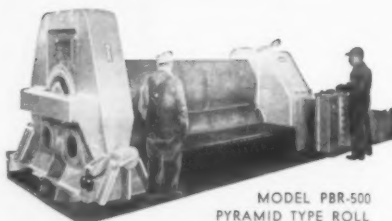
"The picture for 1958 in fasteners will continue to be clouded by imports; this will continue beyond 1958 unless import quotas are set up by our government."

WEBB

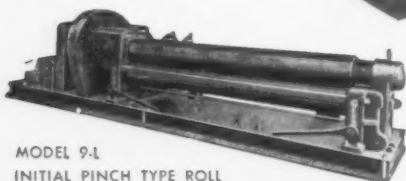
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PLATE BENDING ROLLS

The Webb Corporation offers a complete line of Plate Bending Rolls for the rolling of the thinnest plate up to plate 2½" thick. Offered in a variety of lengths and thicknesses. Constructed for the modern fabricating shop.



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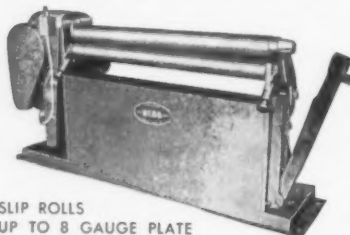


MODEL 9-L
INITIAL PINCH TYPE ROLL

Two types available: the Initial Pinch Type and Pyramid Type machines. All latest advantages of today's modern machine tools are incorporated, utilizing anti-friction bearings, totally enclosed gear drives. Special forming rolls for culvert pipe, stock tanks and other special shapes available.

SLIP ROLLS

A complete line of small Sheet Metal Forming Rolls are also available. All power-driven with shaft sizes 3" to 5" for the handling of the thinnest gauge material, up to 8 gauge material. Special rolls for the forming of polished sheets, aluminum and stainless steels can be furnished. Complete catalogues on any size machine furnished upon request; write Dept. E.



SLIP ROLLS
UP TO 8 GAUGE PLATE

Let Speed PAY-The WEBB Way!



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INITIAL TYPE ROLL



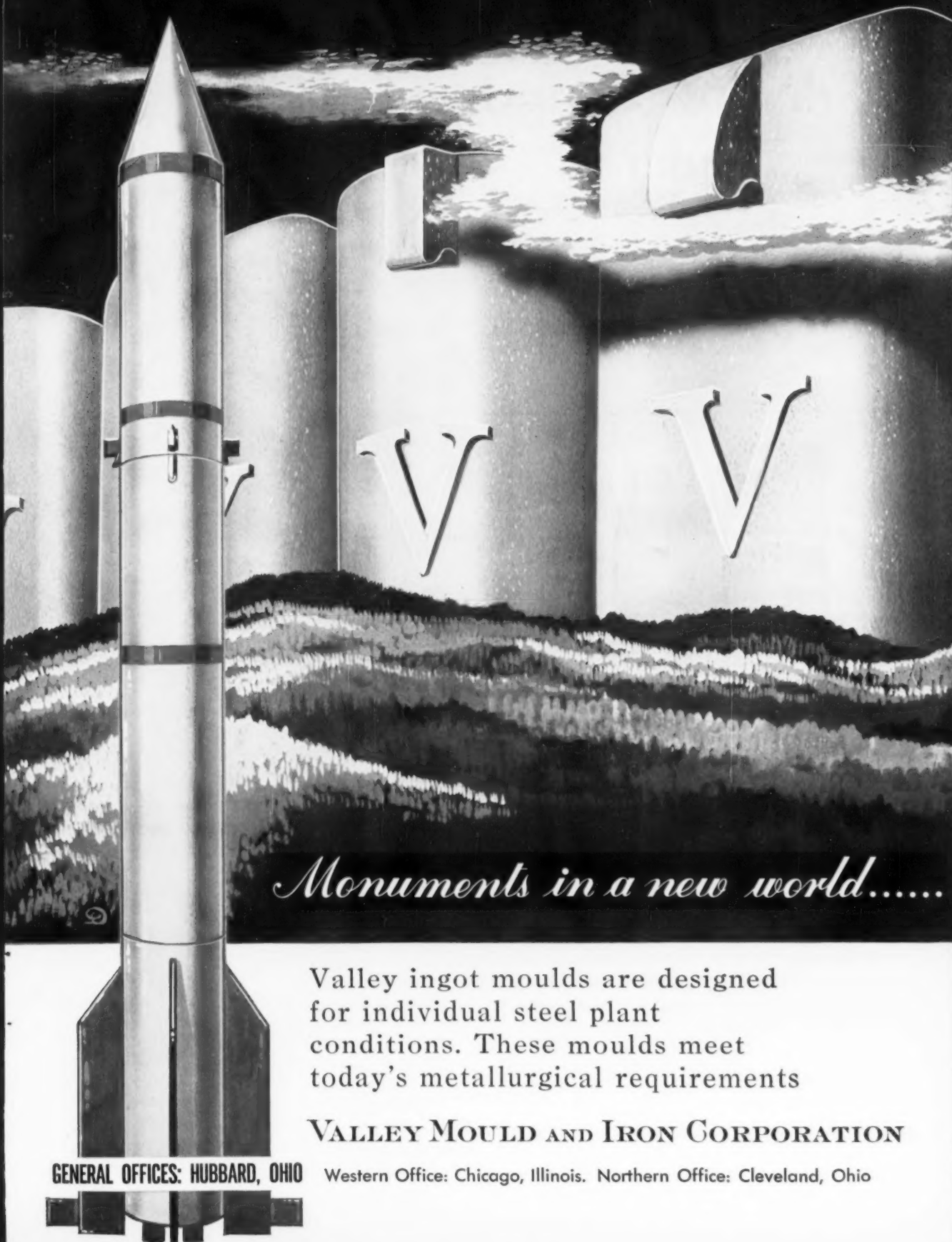
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Valley ingot moulds are designed for individual steel plant conditions. These moulds meet today's metallurgical requirements

VALLEY MOULD AND IRON CORPORATION

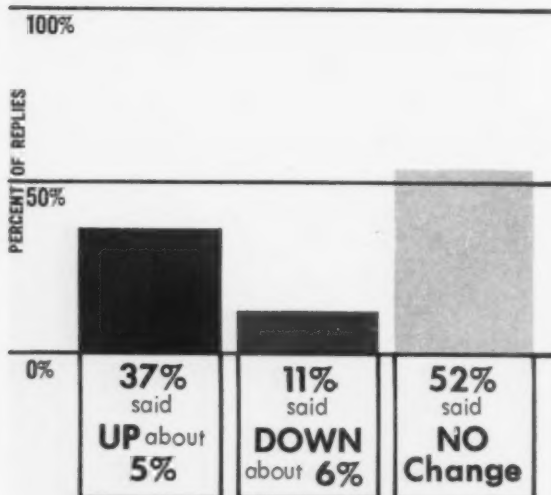
GENERAL OFFICES: HUBBARD, OHIO

Western Office: Chicago, Illinois. Northern Office: Cleveland, Ohio

Gray Iron Founders Pin Hopes On

SELLING PRICES

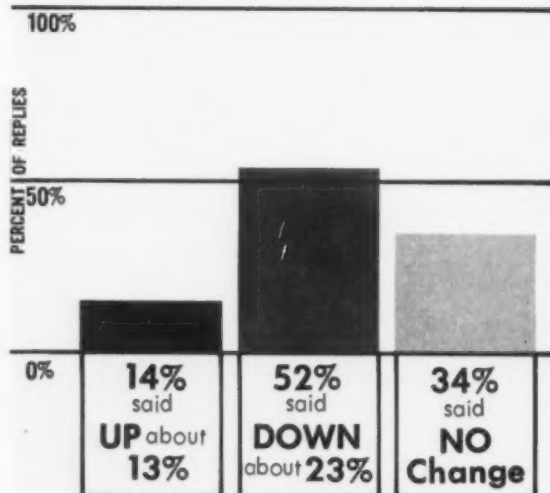
What's the trend?



PROFITS

SIC 3321

How will they compare with '57?



Intensive selling will be needed to boost backlogs of gray iron foundries.

The past year has seen order backlogs drop from over two months to 29 days.

Industry's overall marketing program is expected to boost long-range outlook.

▪ Less than a month's orders pretty much outlines the sales job ahead for gray iron foundries as they enter 1958. Order backlogs (weighted on the basis of employees of the plants answering this survey) dropped from 62 days at the beginning of 1957 to 29 days at the start of this year.

Just how to boost order backlogs meets with a variety of answers from industry executives. One calls strongly for a change in attitude—

charges strongly that the absence of a boom does not mean depression—but that panic and price cutting only serve to foster one.

Need Closer Controls—Price cutting is deplored by many. Others call for more aggressive marketing programs similar to those which the industry has fostered in recent years. To others the answer lies in new techniques, closer controls—and again more selling and less order taking.

As things stand now, 17 pct of gray iron foundry company executives forecast a rise in sales volume of about 14 pct in 1958. Forty-four percent see no change and 39 pct say there will be a drop-off of about 8 pct this year.

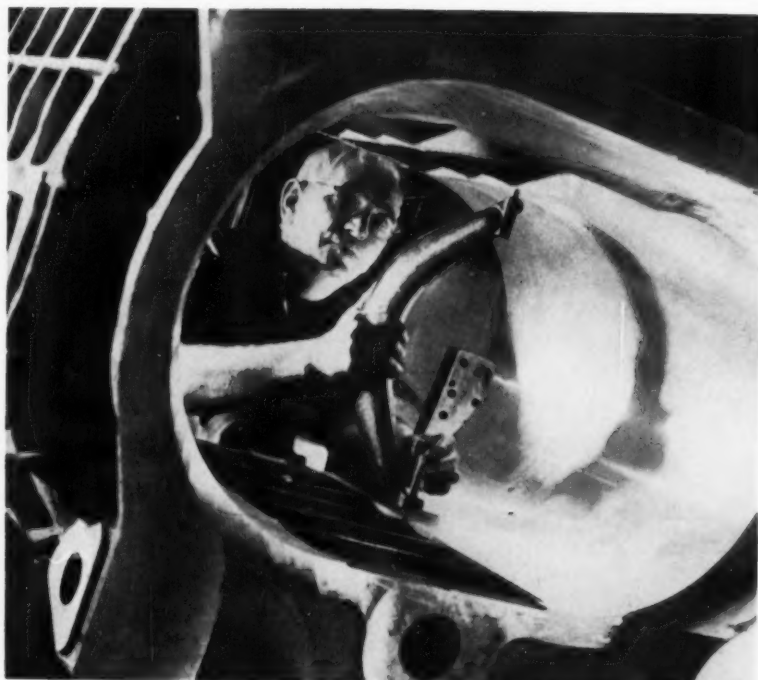
More competitive conditions ahead forecast a profit drop of 23 pct by 52 pct of the industry leaders

queried. A more optimistic 14 pct say they will go up 13 pct. And a remaining 34 pct see profits holding their own with last year.

Wages Will Rise—Wage costs in gray iron foundries will pretty much rise in the same pattern as other industries covered in this survey. Seventy-five percent of the executives predict about a 5 pct increase in wage costs; 18 pct say they'll go down 6 pct and the remaining 8 pct see no change.

On the basis of this survey, price cutting may be less widespread than the vocal protests against it indicate. Fifty-two percent of the gray iron foundry firms said they could see no price changes in 1958. Thirty-seven percent looked for price increases of about 5 pct and only 11 pct called for price cuts of 6 pct.

Marketing Programs



Cleveland Diesel Engine Div. photo

SIC 3321

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	51%	51%
100 to 249	31%	28%
250 and over	18%	21%

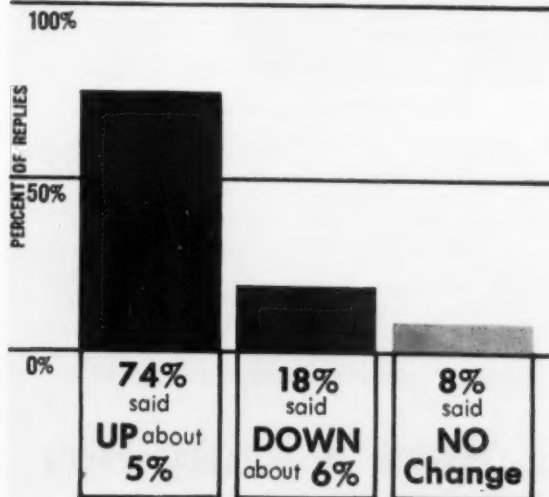
Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Labor demands unfair and harmful . . . Higher costs of materials used in manufacturing . . . Attempted slowdown by workers trying to stretch work . . . Price cutting in effort to keep up or increase sales . . . High taxes, too little retained profits for needs of business . . . Continued high spending by government for unnecessary demands . . . Government interference with law of 'supply and demand.'" **E. Roy Russell, President,**

WAGE COSTS

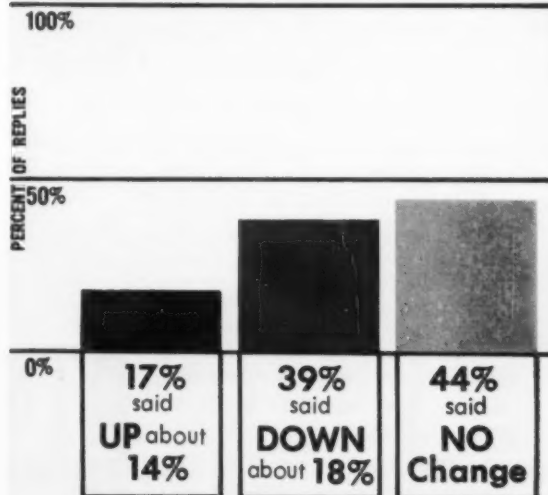
How much, if any, will wage costs increase?



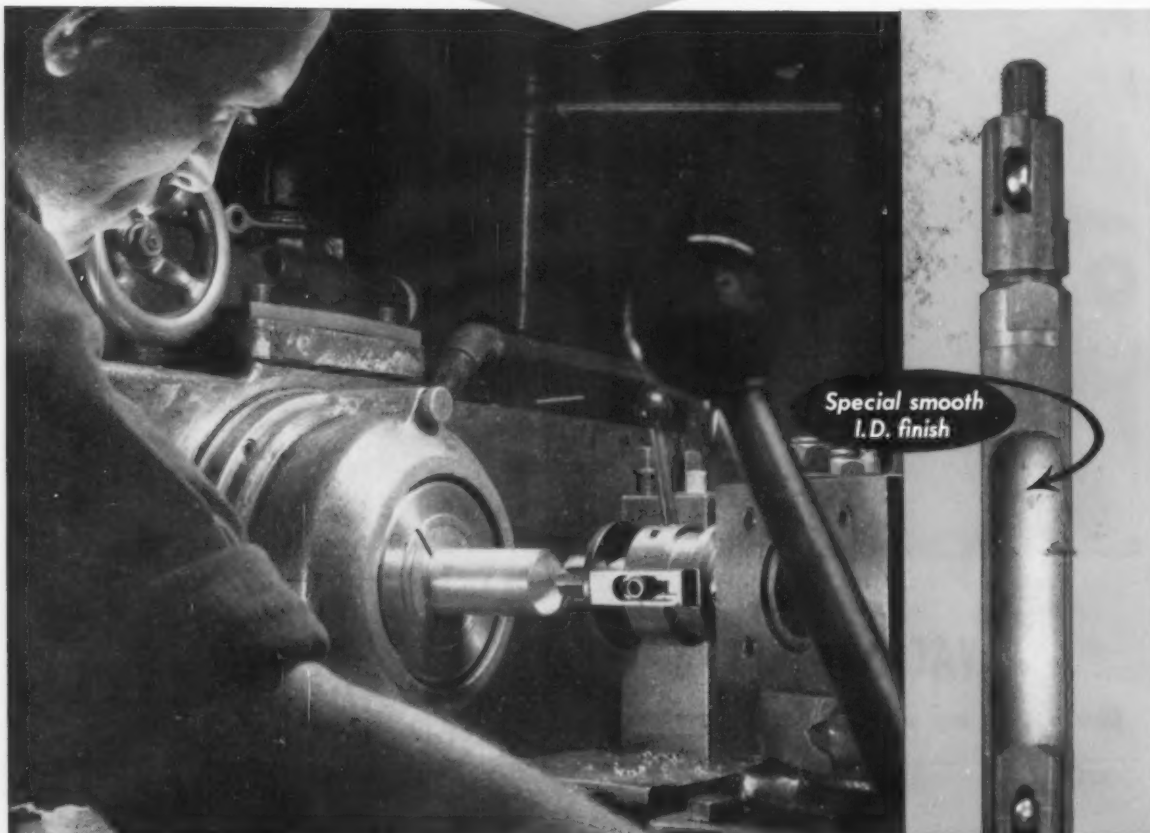
SALES VOLUME

SIC 3321

How will it compare with '57?



**This pump manufacturer reports 25% savings with
J&L COLD DRAWN
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Operator is threading 1 3/4" O.D. x 1 1/2" I.D. J&L special smooth cold drawn Electricweld tubing for pump cylinder.

Low original cost and elimination of interior honing are two reasons why it pays you to specify J&L cold drawn Electricweld tubing with special smooth I.D. finish.

This manufacturer of oil well insert pumps reports a saving of 25% by converting from honed seamless tubing to cold drawn special smooth I.D. Electricweld tubing. Not a single tube failure has been reported from the field.

Because of its superior inside surface finish, exact tolerances

and closely controlled physical characteristics, J&L cold drawn Electricweld tubing is recommended for these applications:

- cylinder tubing • shock absorbers
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J&L cold drawn Electricweld tubing is readily available in diameters from 3/4" O.D. to 4 1/4" O.D., 8 gage to 20 gage, and can be furnished to closer than commercial tolerances. Write to Jones & Laughlin, 3 Gateway Center, Pittsburgh 30, Pa.



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Gray Iron

Continued

Florence Pipe Foundry & Machine Co., Philadelphia, Pa.

"The increasing use of CO₂ for cores and larger molds, and further production of the use of the cold methods for cores and molds." **C. F. Kruepfer, Manager—Foundry Division**, Fort Worth Steel & Machinery Co., Dallas, Texas.

"Our Gray Iron Founder Society is doing a remarkable job of getting the use of gray iron castings across to users and engineers. This has been in progress for about seven years and we are beginning to feel its results. **B. W. Edris, President**, Berks Foundry & Mfg. Co., West Hamburg, Pa.

"Extreme competition which has been experienced all of 1957 will continue into the foreseeable future." **J. W. St. Clair, President**, Hajoca Corp., Philadelphia.

"Shell core making and diaphragm molding." **F. X. Gartland, Jr., Treasurer**, Atlas Foundry Co., Marion, Ind.

"Shell Molding."

"Cutting prices—low production." **W. B. McKee, President**, Gartland Haswell Foundry Co., Sidney, O.

"There appears to be a definite trend toward limitation of inventories. Customers, aware that deliveries of castings can be obtained more readily, are not ordering in such large quantities and are allowing less time between placing orders and required delivery." **F. T. Howell, Manager**, L. Brayton Foundry Co., W. Warwick, R. I.

"Increased transportation costs will force us to sell closer to home." **A. Palmer Grimm, President**, Grimm Foundry Co., Inc., Bound Brook, N. J.

"The newly developed metallics

will take a larger share of the market and upgrading of quality in all products will make greater strides than the past years when quantity was uppermost!" **R. S. Thompson, President**, H. P. Deucher Co., Hamilton, O.

"Our outlet is primarily the automotive field and if they continue good we expect no marketing problem. We are presently enjoying the results of the shell molding process, which has increased our sales." **Theodore Miller, president**, Great Lakes Founders & Machine Corp., Ludington, Mich.

"Marketing program of Gray Iron Foundry Society, combined with efforts of individual foundries. The Gray Iron Foundry industry is in struggle for survival, and only the fittest will survive." **Ralph Hill, President**, East St. Louis Casting Co., East St. Louis, Ill.

"Gray Iron Founders' Society advertising campaign."

"The socialistic to communistic trend of labor will slow down and eventually liquidate all small industry and create government control

of big business—labor is not ready to admit it yet."

"We are putting on a more aggressive selling effort." **J. B. Stubblefield, President**, Memphis Casting Works, Inc., Memphis, Tenn.

"As a jobbing foundry probably the increased development of the Koldset and CO₂ processes."

"Loosen up money." **William Love, President and Treasurer**, Colonial Foundry Co., Louisville, O.

"Foundry industry is experiencing a lot of price cutting in many cases below cost."

"Selling will require closer control over quality, service and sales effort."

"Application of new techniques, closer controls and selling rather than just taking orders." **H. J. McCoy, General Manager**, Attwood Iron Industries, Inc., Grand Rapids, Mich.

"The development of new applications for ductile iron castings will help our picture considerably." **W. S. Hodge, President**, W. S. Hodge Foundry, Greenville, Pa.

"The marketing problem is this: Gray iron foundries are cutting costs where possible. However, they are cutting prices faster than costs."

"What we need more than anything else is a change in attitude or 'business psychology' to reflect the fact that the absence of boom does not mean depression, that panic and price cutting only serve to foster one. Our industry needs confidence in the future and preparation for the upswing which should follow the overdue adjustment we are now experiencing."

"Marketing and selling."

"Spinning process now being used by a few manufacturers will become more of a sales factor in the cast iron and steel pipe field in '58. Quality is becoming increasingly important." **G. Donald Clay, Purchasing Agent**, Morgan Foundry Co., Kansas City, Mo.

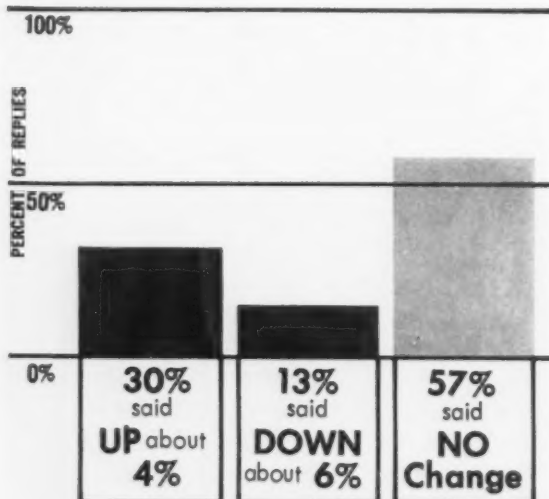


"Just give me a temperature reading . . . I don't care about cooking a cheese soufflé."

Heat Treating Equipment Makers

SELLING PRICES

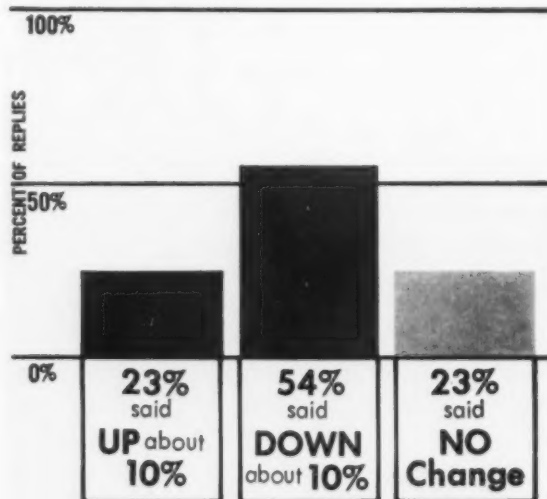
What's the trend?



PROFITS

SIC 3567

How will they compare with '57?



This will be a year of hard selling for the industry as capital spending slows.

Competition is expected to spur the search for new ideas and new products.

Sales and profits are expected to be off, with prices slightly higher than in 1957.

■ It looks like 1958 will be a year of the "hard sell" for heat treating equipment companies. "Hard, aggressive selling" is the way one equipment maker views prospects for the coming year.

The industry this year is faced with the prospect of decreased industrial spending for capital equipment. Most forecasts indicate that although capital spending will still

be substantial, dollar outlays will be off from last year.

Sales Pitfalls—Equipment makers also are confronted with a situation where customers are insisting on firm bids on installations where it is difficult if not impossible to gauge costs precisely. Bidders often run the risk of suffering a heavy loss on such jobs.

Builders are talking—and doing—more about new ideas and new products as a stimulant to sales. They realize that in the present market situation the company that makes a breakthrough in any of the various facets of heat treating will grab off more of the available orders.

Backlogs Dip—The industry's order backlogs have been dropping. On a weighted basis, orders on the books slumped from 142 days at

the end of 1956 to 97 days at year-end 1957. This represents a decline of 32 pct, which is higher than the average for the industries surveyed.

On the same basis, some 27 pct of the equipment makers reported their raw materials inventories were down from year-end 1956, while 35 pct said their finished goods stocks were off. About 19 pct reported raw materials inventories were up, and 31 pct said finished goods stocks had increased.

Price Forecasts—As for selling prices in '58, about 30 pct expected them to rise about 4 pct; 13 pct said they would be down 6 pct, and the balance predicted "no change."

Most of those responding to the survey—54 pct—said they expect profits this year to be down about 10 pct. Another 23 pct forecast a 10 pct boost in profits, while the balance expect no change.

Face Stiff Competition

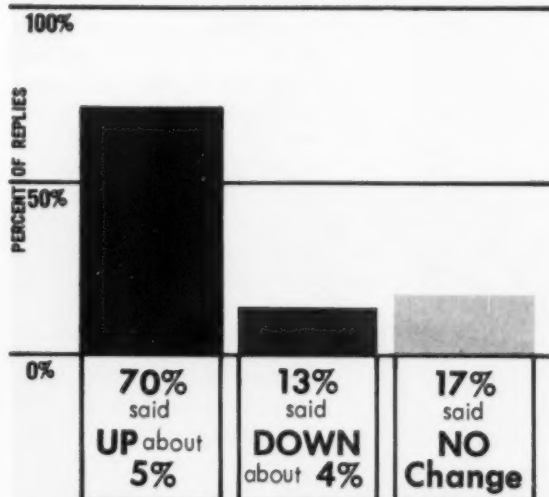
SIC 3567

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	51%	74%
100 and over	49%	26%

WAGE COSTS

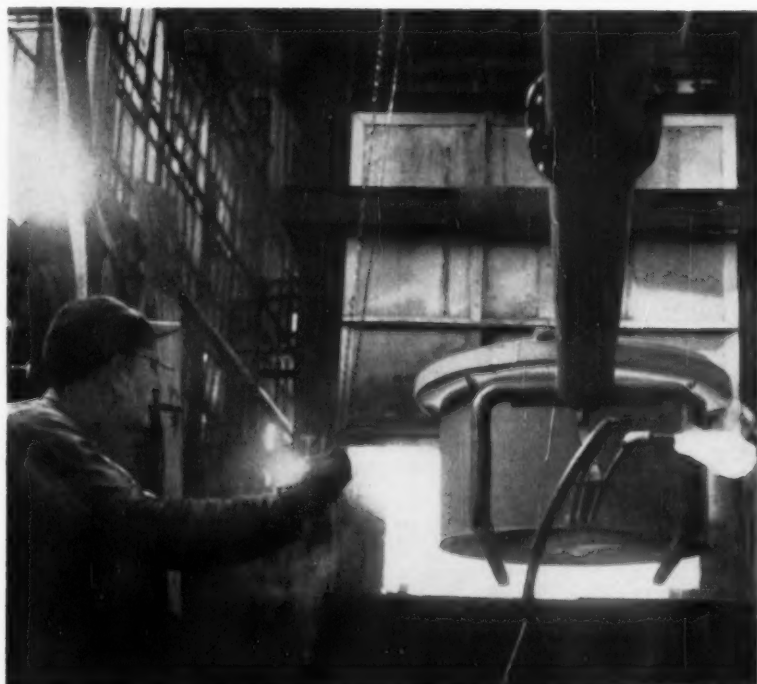
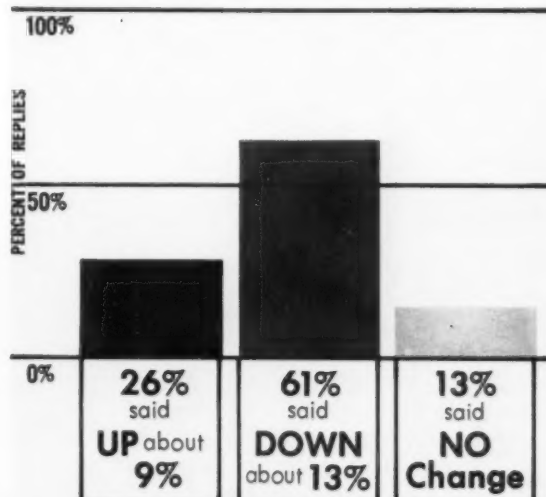
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3567

How will it compare with '57?



Metlab Co. photo

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Hard, aggressive selling." **J. L. Whitten, Vice President & Secretary, Lee Wilson Engineering Co., Cleveland.**

"Our industry faces a very bad situation in marketing—a combination of decreased capital expenditures and an increased demand by customers for 'turnkey' installations at a fixed installation price. Installation of such large equipment in a strange plant with unknown

Heat Treating

Continued

labor and union conditions is about as big a gamble as exists. Customers are shifting responsibility of installation and initial operation to the shoulders of the industry—a very unfair practice.” **C. B. Kentnor, Jr., President, W. S. Rockwell Co., Fairfield, Conn.**

“The further development of high thermal head heating to effect faster heating rates.” **S. M. Stoler, President, R. S. Furnace Co., Inc., Philadelphia, Pa.**

“Change of emphasis from aircraft to missiles, Reduction in titanium demand and increase in atomic power uses.” **E. E. Staples, Executive Vice President, Hevi Duty Electric Co., Milwaukee.**

“Perfection of new conveyor

mechanism for complete heat treating line with improved flexibility, reduced space requirements and drastically reduced costs will open up new potential. Introduction of fully automatic internally gas-heated heating and quenching salt furnace will extend use of this equipment in areas previously closed to all-electric installations.” **L. B. Rosseau, Vice President and General Manager, Ajax Electric Co., Philadelphia.**

“The ‘wait and see’ attitude.”

“Principal products which depend on our past research in vacuum metallurgy and in which we foresee substantial expansion include zirconium and hafnium metal, vacuum furnaces and vacuum annealing equipment. Also, vacuum metalized paper, now being introduced for the first time on a commercial scale.” **Richard S. Morse, President, National Research Corp., Cambridge, Mass.**

“The improvement in our sales for 1958 can be considered to be a combination: (1) Increase in field sales staff operations which started in 1955; and (2) Introduction of new developments.

(a) A new combustion system; (b) a new method of cooling steel with aluminum, and (c) a newly developed automation system for salt baths and plating.” **A. F. Holden, President, The A. F. Holden Co., Detroit.**

“Increased application for high vacuum arc furnaces particularly in alloy steel processing, ‘designing’ alloys for specific applications and application of nuclear energies to metals processing.”

“Unwarranted and illogical price cutting—in many cases this is attributable to those who do not know their real costs! Others have naive attitude toward the application of the simplest economic concepts.”

“Cost of installing custom built equipment very hard to predict and to control.” **G. L. Russell, Purchasing Agent, Burdett Manufacturing Co., Chicago, Ill.**



Courtesy Fisher Body Division, General Motors Corporation

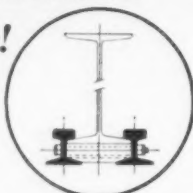
92 ABELL-HOWE CRANES

for automobile body builder!

Specifically, seventy 10-ton cranes, ten 5-ton cranes and twelve 2-ton cranes . . . serving the receiving, production facilities, storage, maintenance and repair, and shipping areas in two separate plants.

The entire job was completed in good order—equipment was accepted promptly upon completion, and there have been no reported cases of malfunction.

Granted, Abell-Howe does not write orders like this every day. In fact, our business has been built on the satisfaction of single crane buyers. Point is, these cranes were purchased in quantity simply because Abell-Howe has the quality construction as well as the conservative price!



Abell-Howe 10-ton crane bridges at Fisher Body are specially designed with Timken bearing equipped flat tread wheels operating on 160' ASCE crane rails fastened to lower flange of I-beam runways . . . no better design for heavy service!

SEND FOR BULLETINS



5-108 SINGLE GIRDER CRANES
Underhung and Top-Running models. Cap.
2,000 to 10,000 lbs.

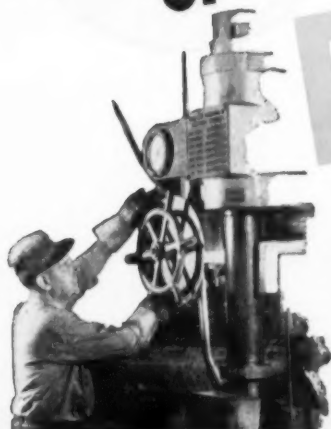
C-108 CRANEMASTER CRANES
4 basic types to suit all building conditions.
Cap. 3 to 20 tons.

**ABELL-HOWE
COMPANY**

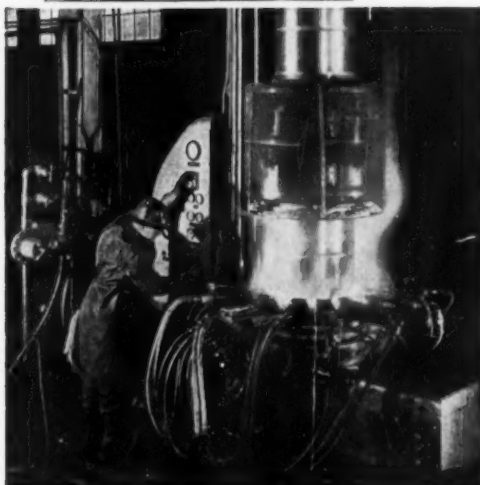
7747 W. Van Buren St. Forest Park, Ill.

**YOU
CAN'T BEAT
THE
COMBINATION
OF**

**SKILLS and
EQUIPMENT**



**...which ONLY the
Commercial Heat Treater
can provide**



Today's modern commercial heat treating plant might well be described as a "department store" for metal treating services. For under one roof are offered you not only the full range of heat treating equipment for all types of processes . . . but . . . of still greater importance, the manpower skills of the management and technicians of those supervising and performing your jobs. Service is their keynote.

Whatever your needs . . . whenever you need it . . .

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Elizabeth, New Jersey

Anderson Steel Treating Co.
Detroit, Michigan

Benedict-Miller, Inc.
Lyndhurst, New Jersey

Bennett Heat Treating Co., Inc.
Newark 3, New Jersey

Commercial Metal Treating, Inc.
Bridgeport, Conn.

Cook Heat Treating Co. of Texas
Houston 11, Texas

The Dayton Forging & Heat Treating Co.
Dayton 3, Ohio

Dominy Heat Treating Corp.
Dallas, Texas

Drever Company
Philadelphia 33, Pennsylvania

Greenman Steel Treating Company
Worcester 5, Massachusetts

Fred Heinzelman & Sons
New York 12, New York

Alfred Heller Heat Treating Co.
New York 38, New York

Hollywood Heat Treating Co.
Los Angeles 38, California

Ipsenlab of Rockford, Inc.
Rockford, Illinois

Ipsenlab of Canada Ltd.
Toronto, Ontario

L-R Heat Treating Company
Newark, New Jersey

The Lakeside Steel Improvement Co.
Cleveland 14, Ohio

Metallurgical, Inc.
Minneapolis 14, Minnesota

Metallurgical, Inc.
Kansas City 8, Missouri

New England Metallurgical Corp.
South Boston 27, Massachusetts

Owego Heat Treat, Inc.
Apalachin, New York

Paulo Products Company
St. Louis 10, Missouri

Pittsburgh Commercial Heat Treating Co.
Pittsburgh 1, Pennsylvania

Pittsburgh Metal Processing Co., Inc.
Pittsburgh 15, Pennsylvania

The Queen City Steel Treating Co.
Cincinnati 25, Ohio

J. W. Rex Company
Pensdale, Pennsylvania

Stanley P. Rockwell Company
Hartford 12, Connecticut

Scott & Son, Inc.
Rock Island, Illinois

Syracuse Heat Treating Corp.
Syracuse, New York

Temperature Processing Co.
North Arlington, New Jersey

Winton Heat Treating Company
Cleveland 16, Ohio

Industrial Truck Manufacturers

Industry's sales outlook tops survey average. Nearly 60 pct of respondents look for another good year.

Builders have cut their raw material and finished truck inventories, are geared for a tough competitive battle.

But their backlogs are off by only 13 pct.

■ Because materials handling is still a growth industry, makers of industrial trucks are rather more optimistic about this year's operations than some other segments of metalworking.

As the "Sales" chart shows, opinion on dollar volume of sales for this year is about evenly divided between the "ups" and the "downs." But a

majority, 58 pct, expect 1958 sales to hold about even with the 1957 level according to an IRON AGE survey of the industry.

Profits to Dip—The same general pattern applies to expected profits of industrial truck manufacturers, although three times more companies expect a dip than expect a gain. Charts on these pages are individual opinion of company executives; they are not weighted by company size.

In view of almost certain wage increases, you can look for some increase in selling prices later this year. Some 57 pct of respondents expect they will have to raise prices by about 5 pct. However, there is a general feeling that the industry will have to achieve some price stability if it is to pay for the development work needed to widen its markets.

Backlogs are naturally below what

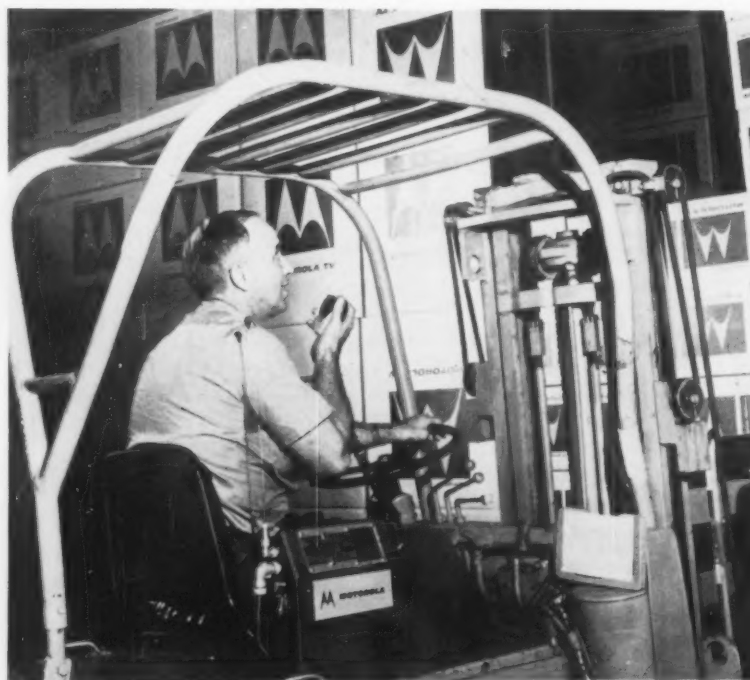
they were at this time last year. But for this industry, the dip is only 13 pct, which is well below the metalworking industry average.

Inventories Cut—Raw materials inventories have been cut from what they were a year ago by some 45 pct of the industry, the survey shows. They are higher for 28 pct, and about the same for 27 pct.

Finished goods in stock have been cut more sharply. Only 7 pct of the industry reports them higher; 50 pct are below what they were a year ago and 43 pct are about the same.

Unlike the charts on these pages, the backlog and inventory figures are weighted on the basis of employment in reporting companies.

The box at the upper right of the facing page shows how survey replies compare with actual number of plants in the various size groups.



Motorola, Inc. photo

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Price stability must be attained in our industry in order to continue the engineering development work necessary to future growth." **C. E. Smith, President, Towmotor Corp., Cleveland.**

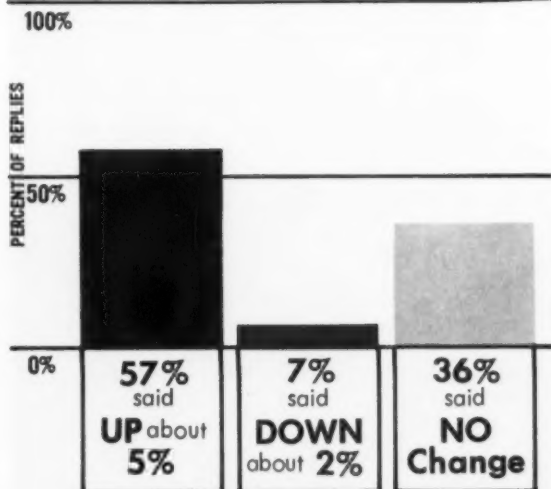
"Automation of material handling."

"Price 'wars', competition, emphasis on customer service." **G. R. Brockway, Executive Vice Presi-**

Are Optimistic

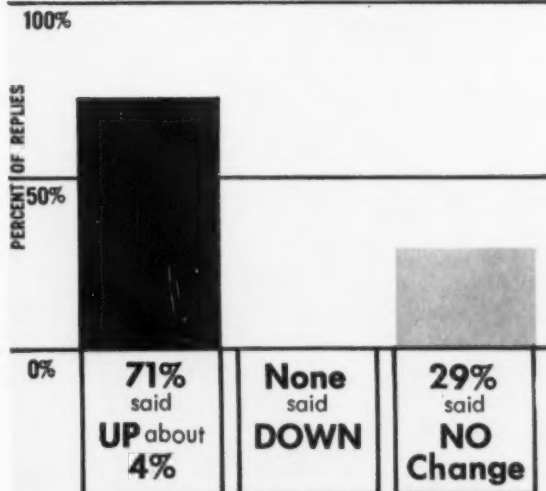
SELLING PRICES

What's the trend?



WAGE COSTS

How much, if any, will wage costs increase?



SIC 3565

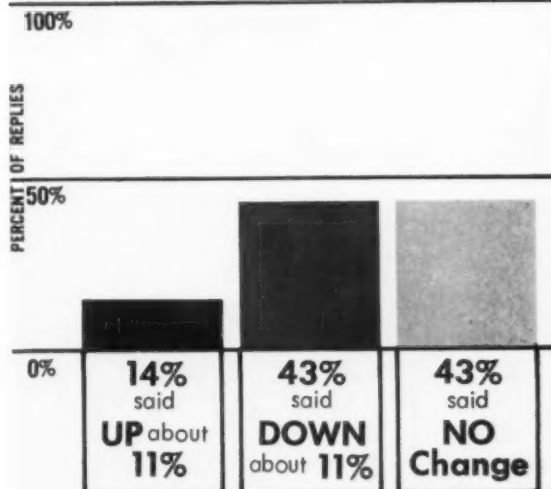
Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	30%	13%
100 to 249	40%	56%
250 and over	30%	31%

PROFITS

SIC 3565

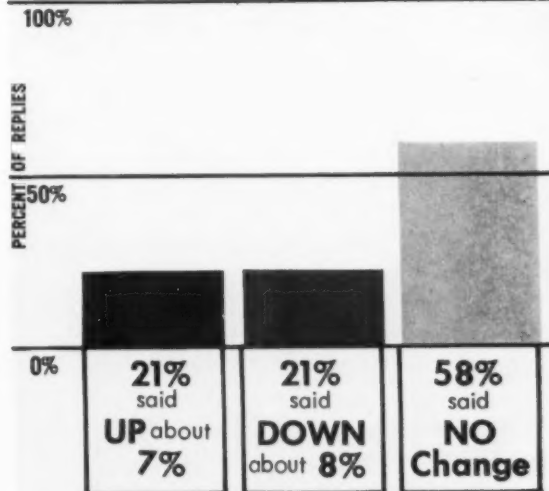
How will they compare with '57?



SALES VOLUME

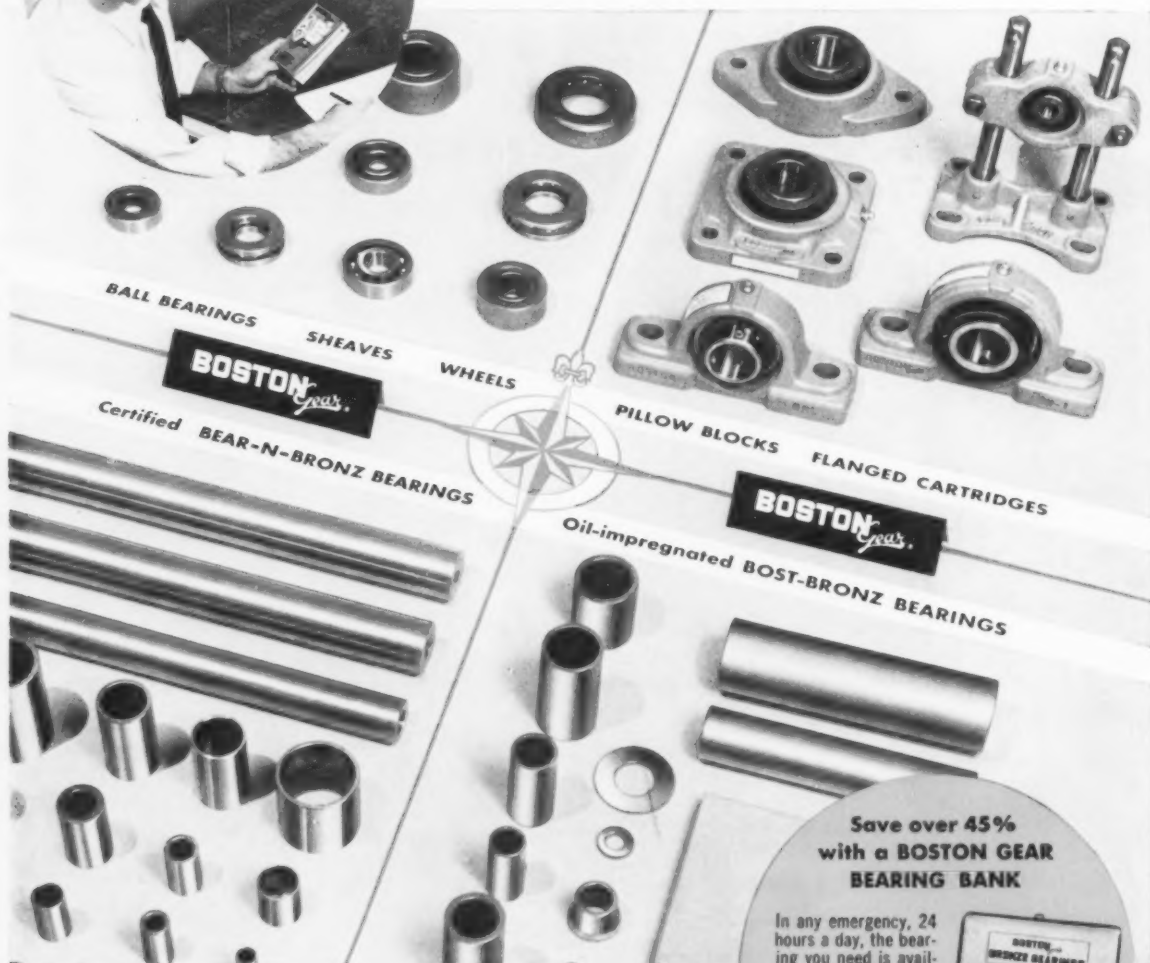
SIC 3565

How will it compare with '57?





Get your BEARINGS
from this big line . . .
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SHEAVES

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PILLOW BLOCKS

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BOSTON Gear
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Stock Gears • Sprockets and Chain • Speed Reducers • Bearings • Couplings

Industrial Trucks

Continued

dent, The Raymond Corp., Greene, N. Y.

"Industry is making careful studies and taking effective action around its plants to see where material handling costs can be cut (still a wide-open area) and productivity raised through increased efficiency in the handling of materials and improved production methods." **J. Faulkner Thomas, President,** Thomas Truck & Caster Co., Keokuk, Iowa.

"Our business is a tail to the kite of heavy industry, railroad business, and shipping." **J. W. Wunsch, President,** Silent Hoist & Crane Co., Brooklyn.

"Need for mechanization coupled with decentralized purchasing of major companies. Population growth will also have tremendous influence." **J. A. Clark, President,** St. John & Co., Chicago.

"Our industry has capacity in excess of presently established commercial markets. The general trend downward in the new purchases of our equipment will force marketing efforts into extensive lease and rental programs and concentration on sales to companies not heretofore contracted—small companies and marginal benefactors."

"Agency distribution as compared to direct selling should benefit us. We are moving in that direction. And, of course, we are continuing to develop new products.

"Sales in 1957 started out pretty well but fizzled out during the summer and now are coming in at a rate—perhaps 30 pct of normal. I think that, barring wars, business ought to be back to normal by the end of 1958." **S. K. Towson, President and General Manager,** The Elwell-Parker Electric Co., Cleveland, Ohio.



1000 TO
25,000 LBS.
CAPACITY

ASK FOR
BULLETIN
NO. 79

**"2 KRANE KARs HANDLE
ALL OUR MAINTENANCE, REPAIRS,
and STORAGE,"** says **CHARLES PRETSCH,**
Master Mechanic, **SLATTERY CONTRACTING CO.**

"The KRANE KARs Assemble and Disassemble equipment at Maspeth yards . . . buckets and shovels, tractor treads, graders, bulldozers, crane booms, backhoes, etc. Load and Unload trucks and trailers, recently loaded out 60 tons of wide flanged beams on one job alone. Stack and Store material in yard, and carry parts to shops, positioning them for repairs. We find KRANE KAR more economical for this type of work."

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**SILENT HOIST
KRANE KAR**

SWING-BOOM MOBILE CRANE

FLUID DRIVE
POWER STEERING

Sold and serviced by
Responsible, Well-Equipped Dis-
tributors throughout the World



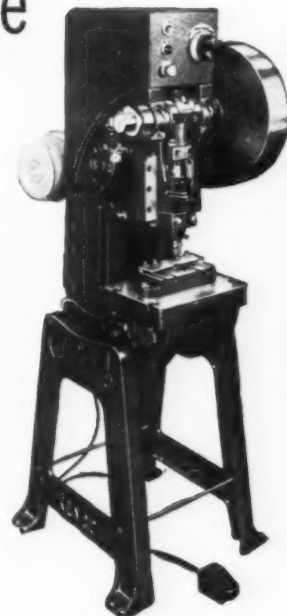
SILENT HOIST & CRANE CO.

Pioneer Mfrs. of Heavy Duty Materials-Handling Equipment
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KENCO

**15-ton Electro-Safe
the safest
punch press
you can buy!**



Single-trip control buttons are widely spaced, to keep hands clear of the danger zone. Operators must push *both* buttons at once . . . hold them until stroke reaches bottom, then release both buttons to start new cycle. Fail-safe operation. Impossible to "fudge." Impossible for press to double trip.

Versatile controls—You can change from "single trip" to "continuous stroke," or "inching" by merely turning a dial. You can change timing in seconds. No flywheel . . . no clutching. Write for details.

KENCO MANUFACTURING CO. 5211 Telegraph Road, Los Angeles 22, Calif.

Missiles And Automation Help

Industry outlook is better than for most industries surveyed.

Good order backlogs, cost-cutting by industry, military spending pattern support optimism.

Industry more confident of ability to make price increases stick.

■ In a dawning age of missiles and increasing emphasis on automation, instrument makers were in a better position than most industries as 1958 began.

Here's why industry leaders could look ahead with confidence:

(1) Order backlogs at the close of 1957 were the highest, in terms of days, of any of 17 industries surveyed. Backlog decline between '56

and '57 was the lowest, 5 pct, or to 109 days from 115.

(2) Industry concentration on cost-cutting through highly-automated equipment in the face of continuing rises in wages and materials costs.

(3) The step-up in military spending for multi-instrumented missiles, and the need to maintain the strength of our Strategic Air Command until our missile arsenal matches that of Russia.

Inventory Policies—Further confidence is reflected in the policies of the industry on inventories. The percentage of companies reporting greater raw materials inventories at the end of last year than a year earlier was well above the average for the industries surveyed. Finished goods inventories also were relatively high in relation to those at the end of 1956.

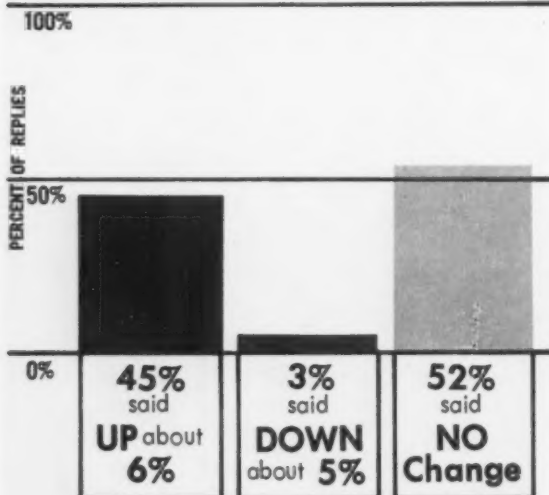
Although there is no lack of competition in the field, instrument makers were more confident of their ability to raise prices next year to meet rising costs. Only 3 pct expect prices to drop, while 45 pct predicted price rises of about 6 pct. This compares with an industry weighted average in The IRON AGE survey of 40 pct forecasting a price rise of 5 pct.

Sales Outlook—Instrument makers also were optimistic on the sales outlook. Some 32 pct expect sales to be up about 12 pct, compared with a weighted average of 28 pct predicting an increase of 10 pct. Only 13 pct expect sales volume to drop.

Of those replying to the survey, 81 pct expect wage costs to rise about 4 pct. Another 13 pct look for wage costs to drop about 5 pct. The balance expects no change.

SELLING PRICES

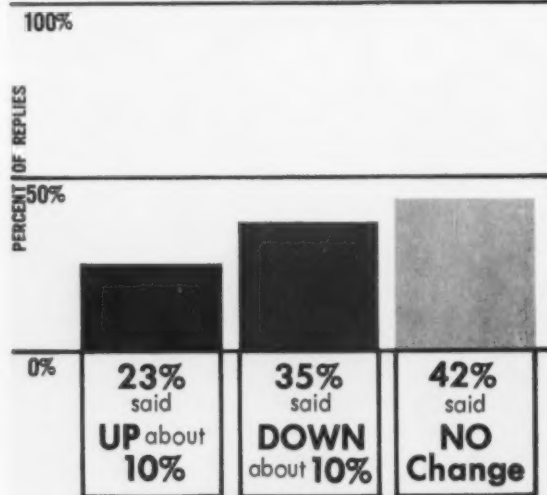
What's the trend?



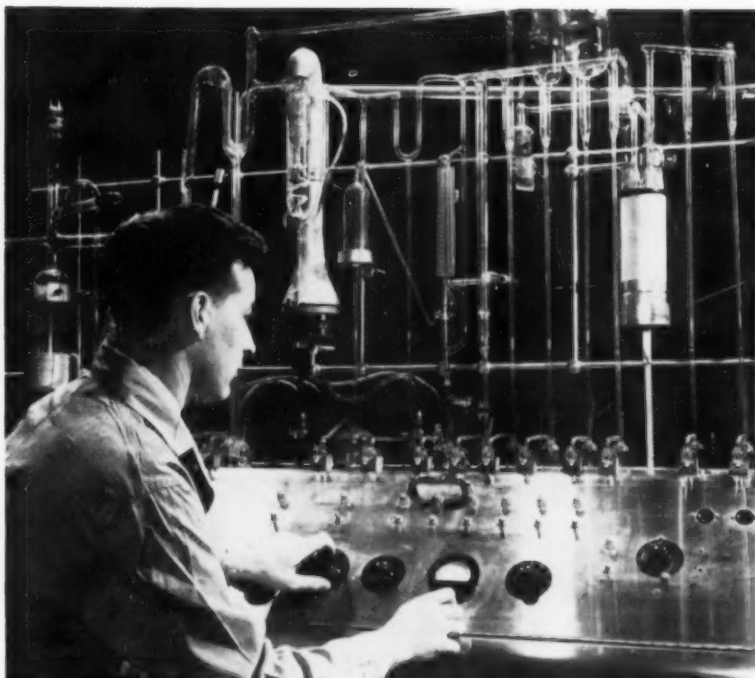
PROFITS

SIC 3821

How will they compare with '57?



Instrument Makers



SIC 3821

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	33%	39%
100 to 499	44%	45%
500 and over	23%	26%

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"The aircraft industry and Defense Dept. budgets for airframes and missiles plus increase requirements for environmental testing."

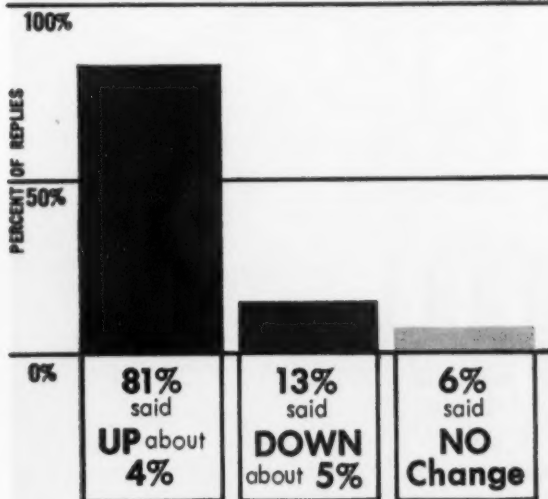
R. G. Tabors, Vice President & General Manager, Electronics & Instrumentation Div., Baldwin-Lima-Hamilton Corp., Waltham, Mass.

"Need higher prices lower corporate taxes."

Continued

WAGE COSTS

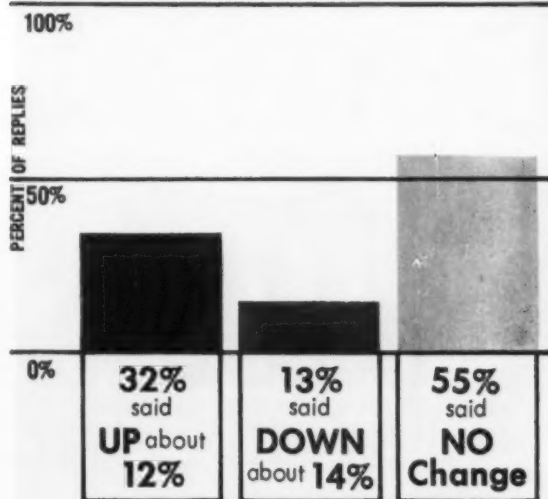
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3821

How will it compare with '57?



WORLD'S LARGEST STOCK 52100 STEEL Peterson STEELS, INC.

Union, New Jersey • Detroit, Michigan • Melrose Park, Illinois

Instruments

Continued

"General business conditions." **I. Melville Stein, President**, Leeds & Northrup Co., Philadelphia.

"Continued technical developments of all kinds and tougher competition." **B. H. Bristol, President**, Foxboro Co., Foxboro, Mass.

"Government spending." **F. G. McClosky, President**, Acro Mfg. Co., Columbus, Ohio.

"The effects of sputnik and the emphasis on missile industry—so far as our industry is concerned." **E. C. Burkhart, President**, Genisco, Inc., Los Angeles 64, California.

"The continuing pressure on management to find ways and means of reducing labor costs by automation." **R. B. Wery, President**, Conoflow Corp., Philadelphia.

"Imports, and new competition from diversification efforts of big United States companies." **H. C. Greene, President**, Thermometer Corp. of America, Springfield, Ohio.

"Exports."

"Uncertainty of Defense Dept. policies and decisions regarding contract allocations and funding." **R. C. Lewis, Partner and General Manager**, The Calidyne Co., Winchester, Mass.

"Defense should be stepped up. Automotive about the same as '57 with stiffer contests on retail. Probably a price cut before end of year."

"In appliance industry — single removable control for a number of appliances."

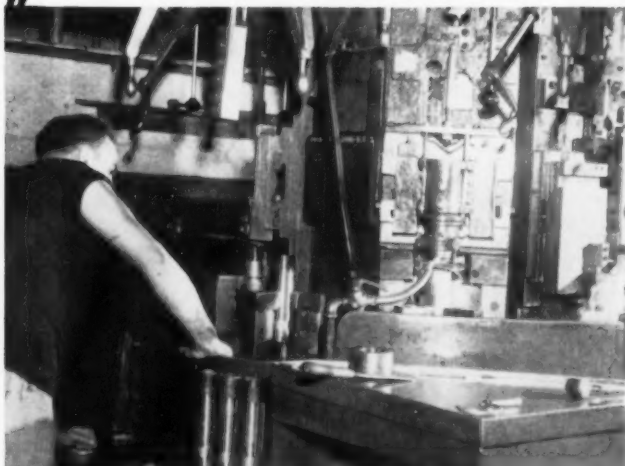
"Missile developments."

"With more competition entering into this field, design for low cost and quality is extremely important. Longer life of components is a must."

Use the coolant that does more jobs at less cost! **HAMIKLEER**

Reg. U.S. Pat. Off.

The Odorless Synthetic Coolant and Rust Preventive



Metalworking plants throughout the country are increasing efficiency, reducing costs with HAMIKLEER—the one, all-purpose, odorless synthetic coolant and rust preventive for use on cast iron, hard and soft steels in many different metalworking applications.

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To test on your own metalworking operations



This testing kit is sent free to all HAMIKLEER users to permit quick, accurate determination of dilution right at the machine.



Manufacturers of
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STEELGARD, IMMUNOL

- These are the jobs HAMIKLEER does and these are the reasons why it will lower your production costs:

1. IT REDUCES REJECTS, SPEEDS PRODUCTION

HAMIKLEER allows finer surface finishes, always keeps the work cool, clean, visible.

2. IT REDUCES INVENTORY

HAMIKLEER eliminates the need for and cost of many different lubricants since it can be used for practically any aqueous phase application.

3. IT PREVENTS RUST

—even in hot humid weather—and eliminates costly cleaning operations.

4. IT WILL NOT TURN RANCID

There are no foul odors to bother operators and reduce worker efficiency.

5. IT REDUCES TOOL REPLACEMENTS

because HAMIKLEER has excellent lubricity and anti-weld properties.

6. IT LASTS LONGER

The amount of HAMIKLEER consumed or carried away is held to an economical minimum by the thin-body of the solution.

7. IT ELIMINATES COSTLY DISPOSAL PROBLEMS

HAMIKLEER will not pollute streams if oils are kept out of the mixture.

HARRY MILLER CORP.

Original Products and Processes Since 1936

4th and BRISTOL STS., PHILA. 40, PA.
DAvenport 4-4000

Service Representatives in Principal Cities

Tool Builders Will Go After the

Falling backlogs signal new marketing approach. Industry will stress ability of tools to step up output per man hour.

Ease of setup, numerical controls, will be spotlighted.

Missile developments may prove a shot in the arm by increasing business confidence, will require some new tooling.

■ The expected decline in spending for plant expansion may turn out to have a silver lining for the machine tool industry. It means most builders will get down to fundamentals; they'll stress output per man hour.

They will be talking "replacement" as they haven't for years, stressing higher output per unit.

They'll push heavier, faster machines, wider use of automatic controls.

Sales Slide—Some 68 pct of builders replying to The IRON AGE survey expect sales to be off about 25 pct. Even more (74 pct) look for a sharp drop in profits. Only 8 pct expect profits and sales to gain about 10 pct.

But among those who expect an upturn in sales or profits are several of the big names in the field.

There seems little chance of any drop in price tags in view of the fact that two-thirds of the respondents expect wage costs to rise about 5 pct. About a fifth of the respondents see a 5 pct drop in wage costs, largely through elimination of overtime.

More than a third of the industry (36 pct) see selling prices going up by about 6 pct during the year. But

the majority, some 64 pct, are not planning any price changes.

Backlogs Drop—The estimated year-end backlog of the industry, according to the survey, was 3 months. This contrasts with 5½ months at the end of 1956. This is a drop of 57 pct. It is the sharpest backlog drop of any of the 17 industry groups in this survey.

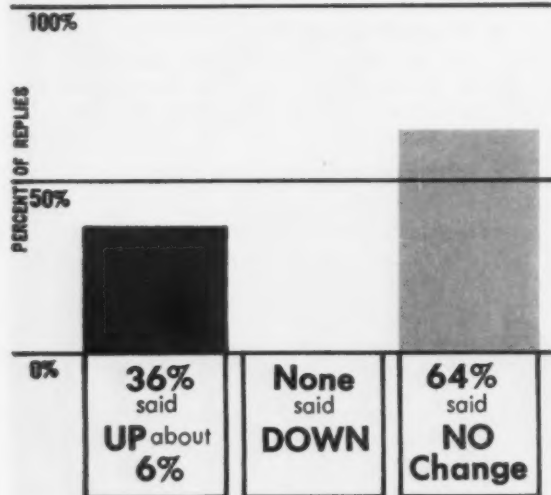
About half of the industry has cut its raw materials inventory below the Dec. 31, 1956, level. And while 20 pct report "about the same" in this area, there are 31 pct who are above the year-ago figure.

Stocks of finished machines are up in 57 pct of the reporting companies; down in 27 pct.

Data Are Weighted—Both backlog and inventory figures cited here are weighted by size of reporting companies.

SELLING PRICES

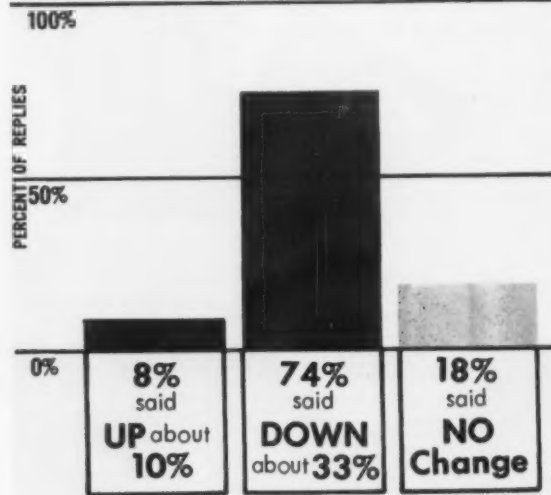
What's the trend?



PROFITS

SIC 3541

How will they compare with '57?



Replacement Market

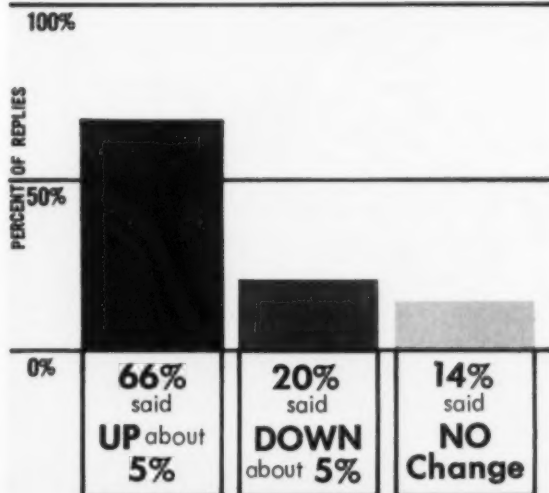
SIC 3541

Percent of Replies by Plant Size:

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WAGE COSTS

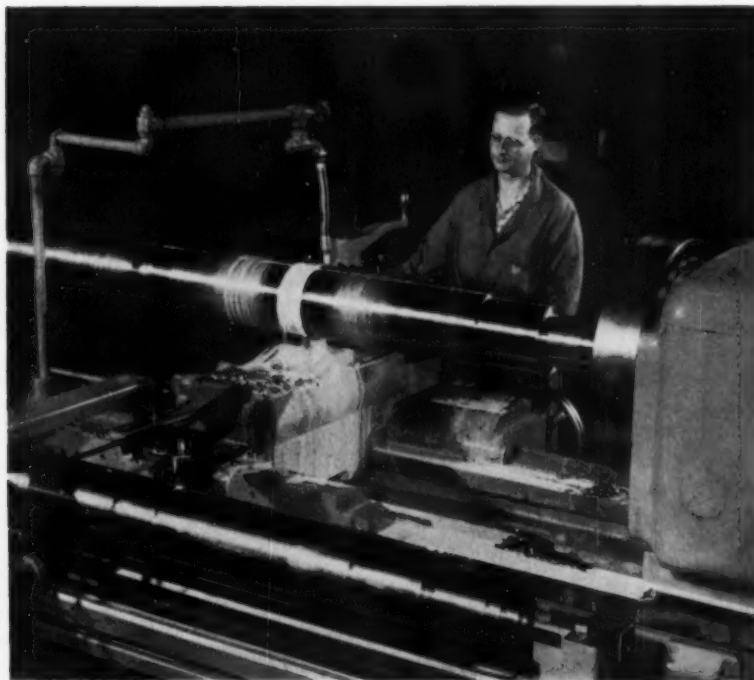
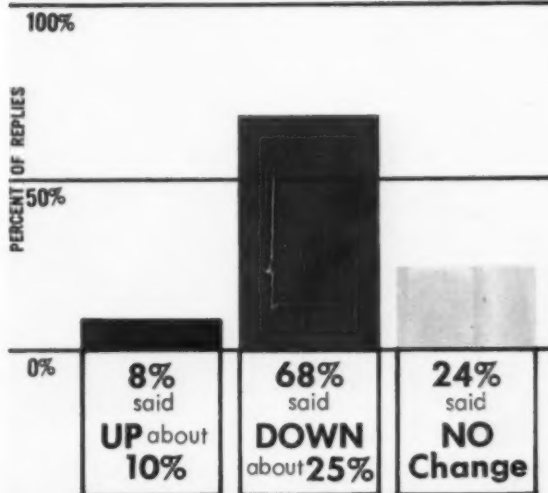
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3541

How will it compare with '57?



Monarch Machine Tool photo

Industry executives say:

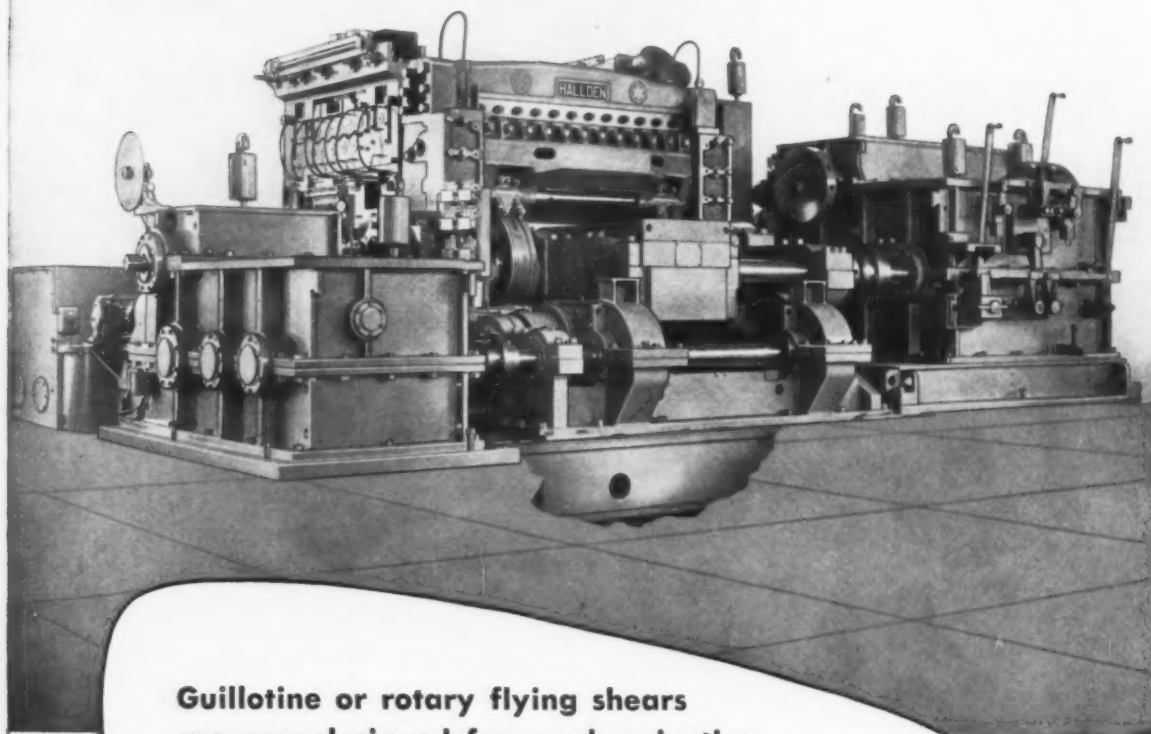
Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"Imports of machine tools will have some negative effect. Missile program may help some. Auto retooling will help more." **A. M. Johnson, President, Barnes Drill Co., Rockford, Ill.**

"Development of missile program will require significant expenditures for capital equipment. This will 'prime the pump' and aid in restoring confidence.

"Increasingly fierce competition

SYNCHRONIZED "On the Fly"



Guillotine or rotary flying shears
are now designed for synchronization
adjustment without stopping the machine.

Automatic Shears

designed and built by

HALLDEN

THE SHEARING SPECIALISTS

THE HALLDEN MACHINE COMPANY • THOMASTON, CONNECTICUT

Sales Representatives

• The Wean Engineering Co., Inc., Warren, Ohio • T. Edward Dodds Co., Pittsburgh, Pa. • W. H. A. Robertson & Co., Ltd., Bedford, England • M. Castellvi Inc., New York, N. Y.

Machine Tools

Continued

in a declining economic cycle; increasing threat from imports!

Both will be offset to some extent by the fruits of research and development which will be reaching the market in the machine tool and fuel-measuring instruments fields." **F. S. Blackall, Jr., President & Treasurer**, The Taft-Peirce Mfg. Co., Woonsocket, R. I.

"Technical: Accelerated trend toward special purpose machine tools less dependent on operator skills and having greater productive capacity, thru incorporation of hydraulic, electronic, and programming devices.

"Marketing: Maintaining satisfactory sales levels, particularly on standard, general purpose machine tools." **George Gorton, III, President**, George Gorton Machine Co., Racine, Wis.

"Scarcity of new orders will parallel the destruction of management confidence by:

International Events: Results of the rapid strides in Russian technology which have shamed our clumsy efforts and inability to organize our resources.

Domestic Events: The government's inability to deal with runaway labor demands and unrestrained unionism. It is becoming increasingly evident to more and more managements that the government is also unequal and unable to cope with these forces—that the 'Hoffas' are, in fact, bigger than Uncle Sam." **Milton Cross, Jr., President**, The Cross Co., Detroit.

"Lack of continued industrial expansion." **Walter K. Bailey, President**, The Warner & Swasey Co., Cleveland, Ohio.

"For technical development: Numerical control; and in marketing: the selling of replacement." **B. Gustafson, Vice President**, Sundstrand Machine Tool Co., Rockford, Ill.

"In my opinion the most important technical development having the most effect on our industry during the coming year will be the development of Numerical Controls for automatic positioning; also two- and three-dimensional contour milling." **J. D. Allan, Sales Manager**, Pratt & Whitney Co., Inc., West Hartford, Conn.

"Introduction of high speed band sawing machine." **Curtis Meyer, Vice President**, Peerless Machine Co., Racine, Wis.

"Increase in missile program. Also some increase in use of plastics." **Walter Sceeles, Asst. to President**, Abrasive Machine Tool Co., E. Providence 14, R. I.

"Principally — scientific marketing and merchandising is going to increase our volume contrary to the tendency of the industry generally." **George Banko, President**, The Cleveland Grinding Machine Co., Cleveland, Ohio.

"Rolling instead of cutting."

"I believe that developments in the Air Force, jet engines and guided missiles will have a tremendous effect on our business, as we manufacture metal sizing machines, used extensively in both the manufacture of jet engines and

guided missiles." **W. L. Martin, President**, Greenerd Arbor Press Co., Nashua, N. H.

"The increased promotion and acceptance of air friction clutches."

"Missiles vs airplanes."

"Nuclear developments and automation."

"Numerical control; automation; tracer lathes of a production type; and quick change-over production machine tools to reduce customers costs."

"Technical changes in the machine tool industry have been many in the last few years. New materials to be machined and new products to be manufactured have contributed considerably to these changes. So have increased labor costs.

The switch of emphasis from piloted planes to guided missiles will have a material effect on the type of machine tools required for military use.

The marked drop in the expansion of production facilities will increase competition. The main sales possibilities for 1958 appear to lie in the replacement field. The purchasers of equipment must be educated to the fact that 'The man who needs a new machine tool is already paying for it.'

"The importation of foreign-made machines competing in our American market." **Harry L. Upsing, Sales Department**, The Carlton Machine Tool Co., Cincinnati, Ohio.

"Hit the replacement market."

"Slow down of plant expansion — tight money."

"Change in product designs for materials savings."

"Tape control—or similar controls to reduce skill required of machine operators."

"Current over-expansion will limit market for original installations, therefore the potential market will be replacement installations."

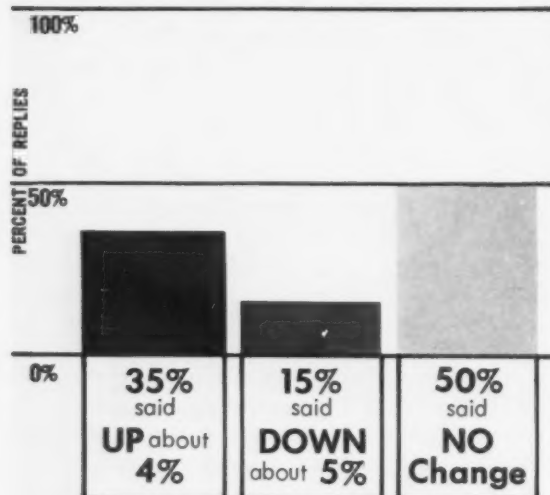


"Do you call this machine automatic? I've been standing here for three hours and it hasn't even turned itself on."

Malleable Founders See a Tough

SELLING PRICES

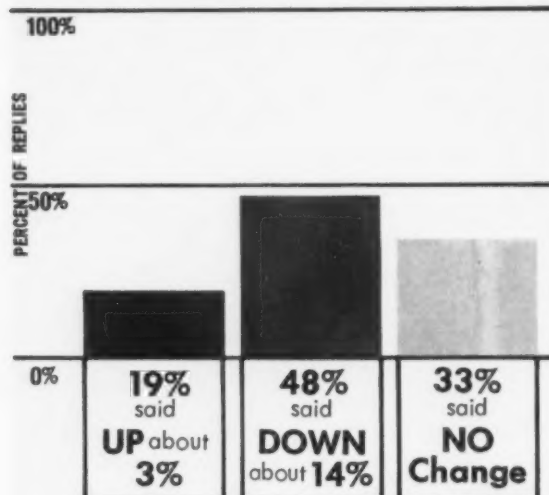
What's the trend?



PROFITS

SIC 3322

How will they compare with '57?



Inventory cutting in customer plants cuts backlogs 36 pct.

Sales are expected to hold about as they were in 1957.

Wage costs are going up and few see much chance of raising prices, so founders expect a profit squeeze.

Look for more stress on pearlitic malleable.

■ In the not-at-all-unusual situation of having more capacity than they can sell, malleable foundrymen face a very competitive year. The industry's price pencils are already razor sharp; more stress on pearlitic malleable and on shell molding seem to offer hope for some.

On the average, you can't look for much change in malleable casting prices. About a third of those re-

sponding to The IRON AGE survey see a slight price increase coming. Some 15 pct say prices may dip by a few per cent. But half said "No change" on prices.

Sales Steady—If one adds those who see no change in sales volume (48 pct) to the 43 pct who see a 9 pct drop and the 9 pct who predict a 7 pct gain the result is a standoff.

Though sales should hold about the same, profits will be squeezed, the respondents believe. The "Profits" chart gives the picture, with nearly half the companies expecting lower earnings. However, nearly a fifth expect a little better showing in 1958.

The wage costs pattern is about like that for metalworking in general. Some 85 pct expect their wage costs to go up another 5 pct this year.

Backlogs Off 36 Pct—The tendency of customers to call for (and get) fast deliveries from foundries shows up in the industry's backlog figure, now about 25 days. This contrasts with 39 days for the reporting companies at the end of 1956. The decline is 36 pct.

Most malleable foundries have cut their cloth to fit: The IRON AGE survey shows that 62 pct have lower backlogs now than they had a year ago. Twenty percent have them at about the same level, and 18 pct report them above the year-ago figure.

Percentage figures shown on the charts on these two pages are individual replies, unweighted.

Data for backlogs and raw materials inventories are weighted on the basis of employment in responding companies.

Competitive Year



Caloric Appliance photo

SIC 3322

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 249	51%	55%
250 and over	49%	45%

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

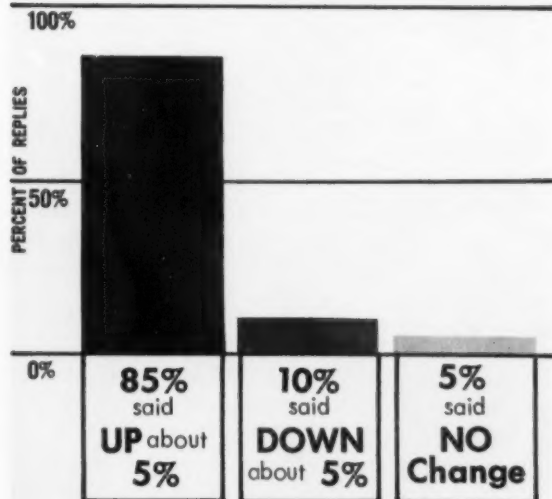
"We believe the promotion of pearlitic malleable offers the best potential for the expansion of our market. Customers are continually getting more conscious of price, quality and service. It will take a lot of doing to make a profit in 1958." **C. B. Brust, President**, Eastern Malleable Iron Co., Naugatuck, Conn.

"High interest rates."

"The forcing of lower prices due

WAGE COSTS

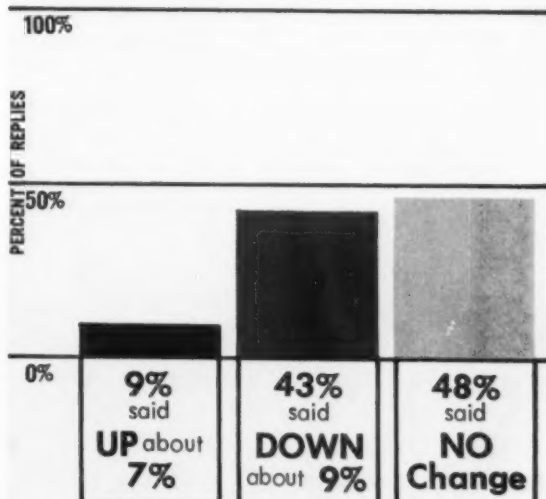
How much, if any, will wage costs increase?



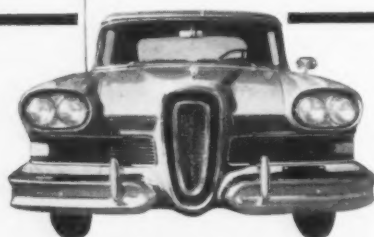
SALES VOLUME

SIC 3322

How will it compare with '57?



How about Malleable?



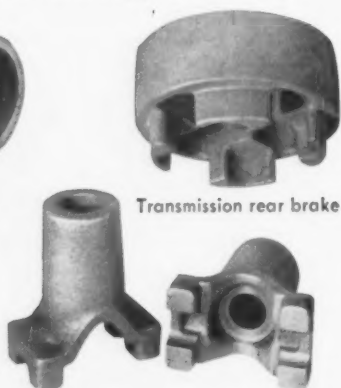
The
1958
Edsel

America's *Newest Automobile*
includes Malleable Iron Castings
as important components



Power steering housing

Universal joint flange



Transmission rear brake drum

Recognized for its durability and versatility for over 130 years, and used for parts in all kinds of transportation equipment, it's not surprising to find applications of standard and pearlitic Malleable castings throughout the Edsel.

The three Edsel parts examples illustrated are important uses of malleable. The power steering mechanism housing is certainly a place for safety insurance. The universal joint flange is a vital link in the power train. And the transmission rear brake drum helps complete the flow of engine power to the car's drive wheels.

It's very likely *your* product could be strengthened, lightened or improved by the use of malleable iron castings. And malleable's easy machinability speeds production and cuts costs. A helpful review of *all* malleable iron advantages is contained in our new publication "Value Analysis". Write for your copy — to the Malleable Founders' Society.



Consult a malleable foundry engineer at the drawing board stage.



1800 Union Commerce Building

Cleveland 14, Ohio

Malleable Iron

Continued

to competition in the face of rising labor costs." **Hugh L. Kirsh, President**, Kirsh Foundry, Inc., Beaver Dam, Wis.

"Closer inventories." **C. L. Liebau, President**, Federal Malleable Co., Milwaukee.

"Our 'manufacturing processes' are rapidly becoming our customers 'inventory.' The tendency to reduce inventories of both rough and finished castings on the part of our customers is necessitating handling a large proportion of our business on a 'rush-emergency' basis with insufficient lead time to keep costs in line." **R. S. Bradshaw, Jr., Vice President-Operations**, Texas Foundries, Inc., Lufkin, Texas.

"Planning to diversify into non-ferrous metals — high strength aluminum castings, sand and/or permanent mold cast." **H. Lloyd Hess, President**, Lancaster Malleable Castings Co., Lancaster, Pa.

"On the plus side, shell molding and pearlitic malleable iron. On the minus, unwarranted price cutting." **W. C. Brisse, Treasurer**, Laconia Malleable Iron Co., Inc., Laconia, N. H.

"Conversion of forgings and steel castings to malleable iron based on re-educational program by the industry for design engineers employed by natural customers of our industry."

"Cost reduction brought about by new equipment and technology, somewhat offset by wage increases."

Reprints of the report for this or other specific industries are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., THE IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.

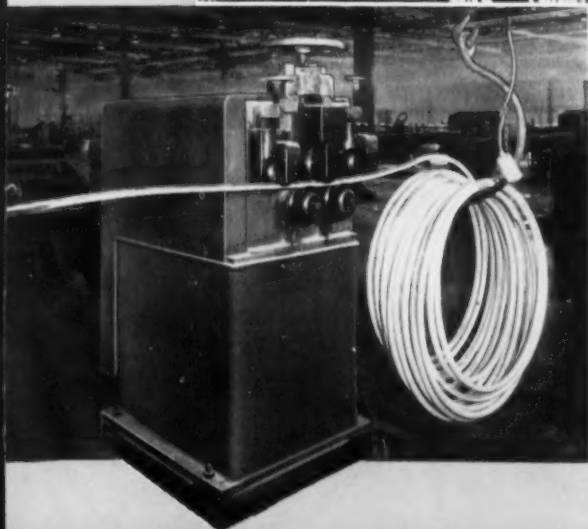
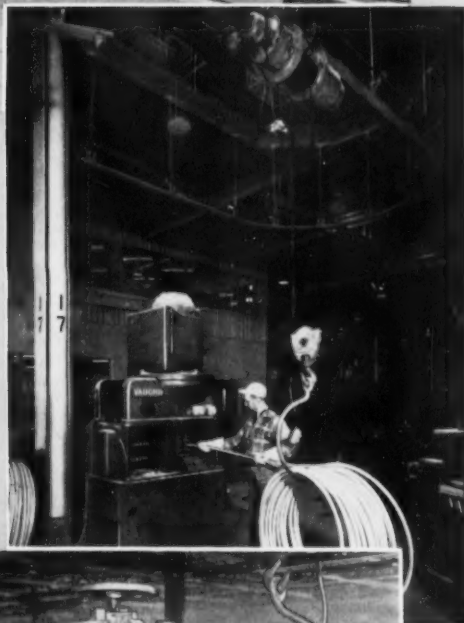
*A TIP
FOR THE
TIMES*

SPEED HEAVY WIRE PRODUCTION

with ADVANCED

Vaughn

AUXILIARY EQUIPMENT



new FLOOR REEL

with Positioning Base

Meeting today's need for better pre-drawing preparation and handling of heavy wire, Vaughn presents this new Floor Reel upon which the coil is lowered, with Positioning Base. This advanced equipment permits the straightened, pointed wire end to be passed through die to grip with small effort by the operator—and better production!

new

Extra-Heavy

4-ROLL CONTINUOUS POINTER

This king-size pointer is capable of accommodating a range of wire from $\frac{1}{2}$ " to $1\frac{1}{4}$ ". It has two vertical and two horizontal rolls for ease of pointing without twisting the wire, and is in every way a heavy, rugged, long-life machine for the most arduous service.

new

ROLL STRAIGHTENER

At the beginning of the pre-drawing preparation cycle is the new Vaughn 3-roll straightener, where a section of the trolley-transported wire coil is mechanically straightened. This makes handling to pointer and die box an easy matter, contributing to the time and manpower savings that help boost production with modern Vaughn equipment. Details? Gladly, on request.

The *Vaughn* **MACHINERY COMPANY**

Cuyahoga Falls, Ohio, U.S.A.

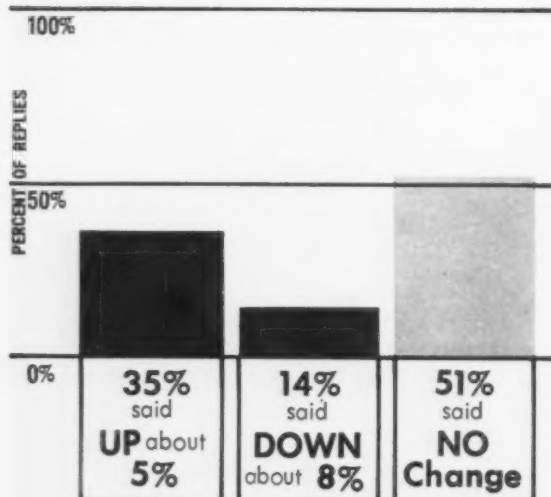


COMPLETE COLD DRAWING EQUIPMENT—Continuous or Single Hole . . . for the Largest Bars and Tubes . . . for the Smallest Wire . . . Ferrous, Non-Ferrous Materials or their Alloys.

Foundries Fight Rising Costs And

SELLING PRICES

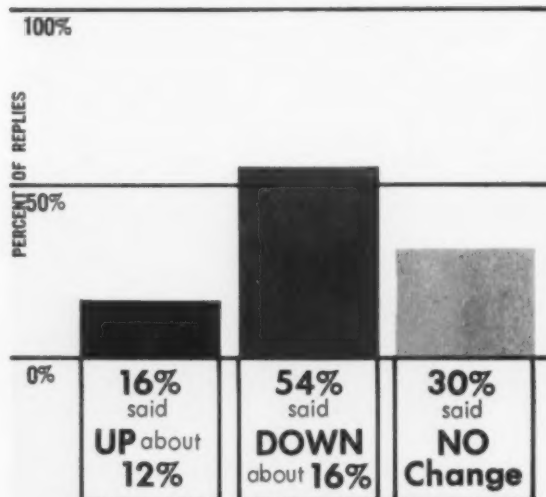
What's the trend?



PROFITS

SIC 3361

How will they compare with '57?



Nonferrous foundries squeezed between higher costs and customer resistance to price rises.

Industry recognizes need for better techniques to meet competition from within and without.

Outlook in sales, profits, wage costs, and prices about the same as other industries covered.

■ Nonferrous foundries are caught between rising costs and customer resistance to higher prices. What to do about it seemed to be the most important question facing the industry in the year ahead.

Also uppermost in the minds of founders was how to combat the growing trend among customers to set up their own "captive" shops. Competition from other methods of

fabricating was still another worry.

Industry Needs — The situation pointed the way toward (1) an intensification of the recognized need for improved foundry techniques; and (2) research and development of new products.

Most founders were resigned to a year of slimmer profits, or, at best, to a sidewise movement on earnings. The same general thinking prevailed on the sales outlook, although a slim plurality thought volume would be up over last year.

Wages Will Rise—That old bugaboo, rising wage costs, will haunt the industry again this year. Nearly 80 pct of the companies responding to the survey expected wage costs to rise about 6 pct. Another 11 pct look for a decline of 6 pct.

Indicative of the founders' dilemma on prices was the fact that 51

pct expect prices to hold steady in spite of higher costs.

Backlogs Drop—Still the industry's problems apparently were no worse in most respects than those of other industries. There were only slight differences in the outlook on sales, profits, wage costs, and selling prices. On backlogs, though, the industry was in the bottom third in terms of days at the close of 1957. At that time, backlogs were estimated at 46 days compared to 74 days a year earlier.

But nonferrous foundries, like others, were trimming stocks to cut costs in the face of changing conditions. Raw materials inventories were down sharply. Some 62 pct reported that stocks were down from the end of 1956. Another 30 pct reported they were about the same; and only 8 pct said inventories were up over the same period.

Price Resistance

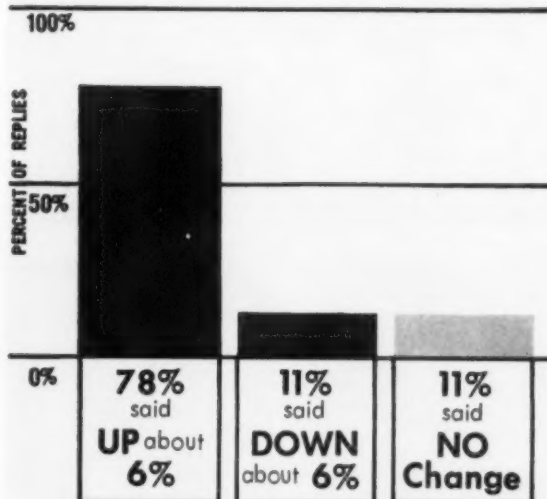
SIC 3361

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	54%	60%
100 and over	46%	40%

WAGE COSTS

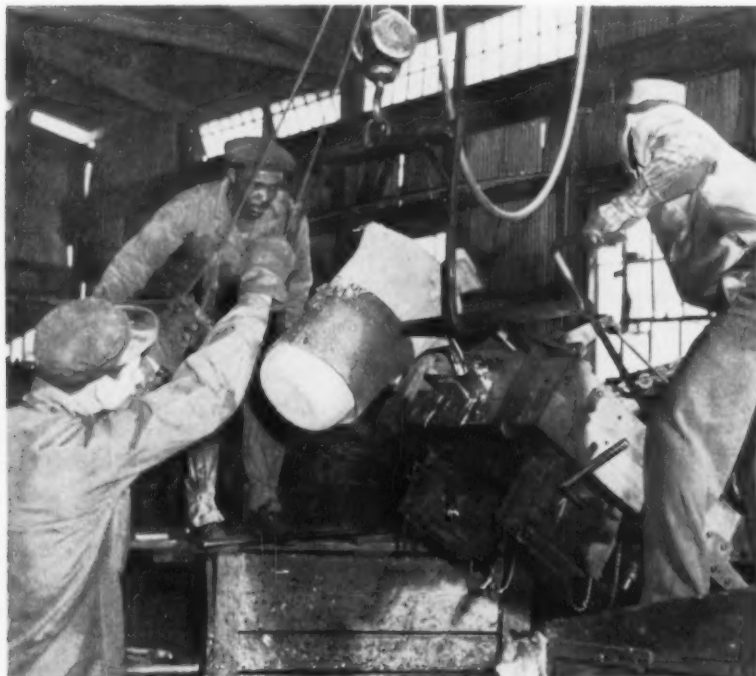
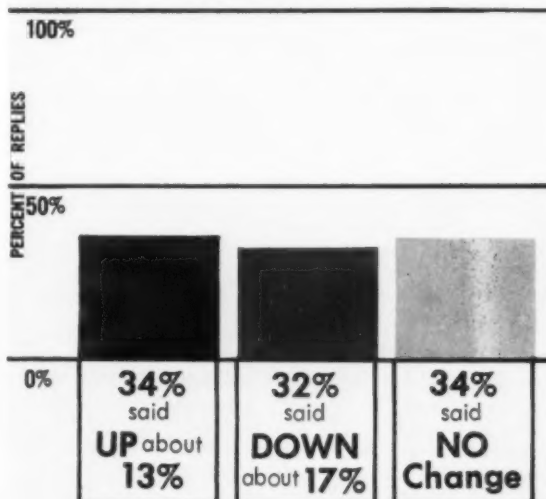
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3361

How will it compare with '57?



Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"In aluminum the high purity alloys will replace the older materials. With higher strength and ductibility not only at room temperatures but also at minus temperatures.

In magnesium the rare earth-thorium and cerium alloys will replace the older Al-2 alloys."

"Our business is aircraft castings; the downtrend in our business is strictly political." **Hart Reynolds,**

Continued

The PROOF of DSC STEEL is in its PERFORMANCE

ON YOUR
JOB

DSC Specialized STRIP

helps hold down your job-run costs

SPECIAL "SPEC" STRIP—All DSC STRIP is special-purpose steel . . . only some is more so. Examples—specially restricted thickness tolerance (often mighty tight); special satin finish (not too satiny, not quite bright); special temper (not limited to standard "2," "3," "4" or "5").

HOW Specialized STRIP PAYS OFF—Helps sustain steady, high-speed production; increases yield; minimizes rework expense; prolongs tool and die life; gives closer control of unit costs; improves product quality; protects anticipated profits.

TYPICAL CASES—A maker of precision engine bearing-backs specifies specially restricted thickness tolerances (in a wide range of gauges) in combination with special satin finish. Purpose: to reduce fabricating costs, conserve costly alloy lining materials; prolong bearing life; safeguard engine performance.

Another DSC STRIP application (identity withheld at customer's request) is an uncomplicated, little stamping. Here—level gauge and even temper permit automatic feed on a battery of four high-speed presses operated by one man. Result: man-hour costs minimized; jamming (as with less uniform steel) avoided; tools and presses protected; production delays eliminated.

JOBS WE LIKE TO TACKLE:

- **LEVEL GAUGE**—standard or restricted tolerance (electronically rolled and controlled)
- **HEAVY GAUGE** (up to $\frac{3}{16}$ ") or **LIGHT** (down to about .010")
- **EVEN TEMPER**—controlled to suit your job
- **HIGH CARBON SPRING STEEL** or **LOW CARBON STRIP**
- **SATIN FINISH**—controlled to suit your end-use
- **DEEP ROLLED RBF**—suitable for chrome plating (The sure working steel with eye-appeal)

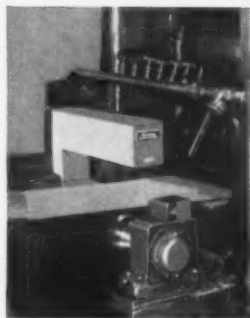
SPECIALIZED SERVICE, TOO—On new applications the first step is to get the job-facts. Your DSC Customer "Rep" does that. In certain cases we like our operating people to meet yours . . . at your pleasure, of course. That's usually a big help in selecting the raw steel and in deciding on processing procedures that best fit your job. Then we follow up regularly to make sure the strip does what you expect of it.

DELIVERY?—NAME YOUR OWN LEAD TIME—
WE'LL SCHEDULE TO MEET IT

Our job is to help you with yours
How about calling a DSC Customer "Rep" . . . today?



ONE OF DSC'S 3 Accu-Ray® CONTROLLED 4-H'S.



THE ELECTRONIC GAUGE



THE THICKNESS RECORDER

PICTURED ABOVE ARE TYPICAL DSC "TOOLS" FOR PRODUCING DSC SPECIALIZED STRIP

Accu-Ray® is the registered trade-mark of Industrial Nucleonics Corporation, Columbus, Ohio



*Customer Satisfaction
Is Our Business*

DETROIT STEEL CORPORATION

GENERAL SALES OFFICE, DETROIT 9, MICHIGAN
DSC CUSTOMER "REPS" IN PRINCIPAL CITIES

DSC MILLS AND PRODUCTS

PORTSMOUTH DIVISION, PORTSMOUTH, O.

Coke • Coal Chemicals • Pig Iron
Basic OH Steel Ingots • Blooms • Slabs • Billets • Rods
Hot Rolled and Cold Rolled Sheets • Low and Medium Carbon
Manufacturers' Wire • High Carbon Specialty Wire • Aluminum Cable Strand
Reinforcement • Rope Wire • Tire Bead Wire • Welded Wire Fabric

MILL DIVISION: DETROIT, MICH., HAMDEN, CONN.

Cold Rolled Carbon Steel Strip
Flat Cold Rolled Carbon Spring Steel

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Nonferrous Castings

Continued

General Manager, Linmold Co.,
Compton, Calif.

"Anticipated Bur Aer fiscal 1959 cutbacks should have a cataclysmic effect upon the second half of 1958 metalworking industry picture. Last half 1958 fiscal year cancellations and stretchouts will underwrite the aforementioned eruption." **E. K. Hutchinson, Precision Metalsmiths, Inc.,** Cleveland.

"Defense Spending." **K. A. Digney, President, Oberdorfer Foundries, Inc.,** Syracuse.

"I believe development of automatic and/or remote controlled devices for protection against fire in missile launching sites and oil storage depots. This is peculiar to our industry, the manufacturing of fire fighting devices, and not one of interest in general to non-ferrous foundries." **J. E. Fishelson, President, Akron Brass Mfg. Co., Inc.,** Wooster, Ohio.

"Technical: Improved commercial foundry techniques to combat other methods of fabrication at competitive costs. Application of colored porcelain enamel to both diecastings and (present) permanent mold castings.

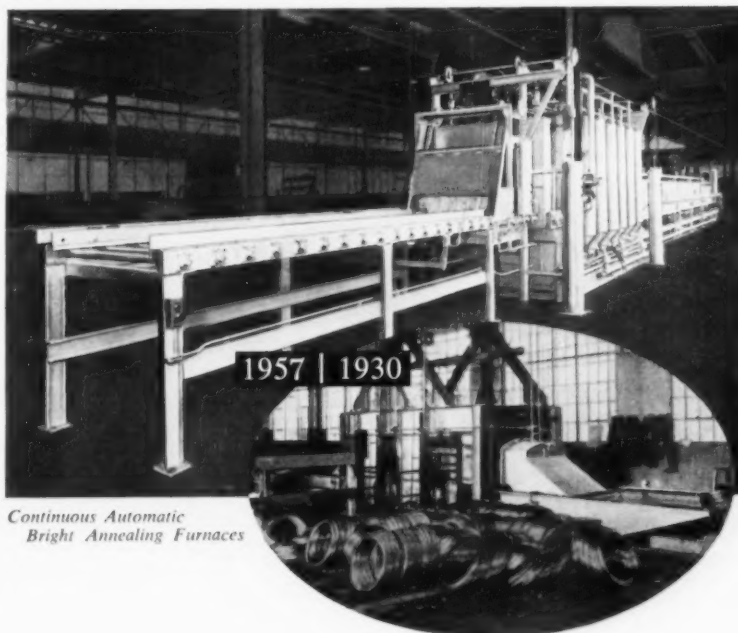
"Market: Applying above factors to new products and markets while discouraging growing tendency of customers to enter "captive" operations to make their own castings."

"No technical developments in non-ferrous foundry. Greater competition in a buyers market."

"Mechanization and price cutting in the face of increasing costs."

Reprints of the report for this or other specific industries are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., THE IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.

HOLCROFT • BLAZING THE HEAT TREAT TRAIL FOR OVER 40 YEARS



Continuous Automatic
Bright Annealing Furnaces

Yesterday's Pioneers . . .

Today's LEADERS

Almost 30 years ago, Holcroft was leading the way in the development and refinement of continuous automatic heat treating furnaces. The furnace shown in the oval, for example . . . an oil fired, muffle-type, steam atmosphere furnace for bright annealing copper wire . . . was built back in 1930 for a prominent Canadian wire and cable manufacturer.

Holcroft's position of leadership, well established then, remains unchallenged now . . . and Holcroft's present-day version of a continuous automatic bright annealing furnace (illustrated above) perhaps best explains why. For this modern furnace bright anneals brighter, cleaner, faster. It features radiant tube heating, controlled exothermic atmosphere, complete mechanical handling, a temperature regulated cooling tunnel . . . and it will handle 2,500 pounds of copper and brass tubing per hour, straight or coiled, in sizes from tiny capillary to 3" O.D. In a word, it's *all Holcroft*, and in a heat treat furnace there's nothing finer. You'll find that out for yourself when you make your next furnace a Holcroft.

HOLCROFT AND COMPANY



6345 EPWORTH BOULEVARD • DETROIT 10, MICHIGAN

PRODUCTION HEAT TREAT FURNACES FOR EVERY PURPOSE

CHICAGO, ILL. • CLEVELAND, OHIO • HARTFORD, CONN. • HOUSTON, TEXAS • PHILA., PA.
CANADA: Walker Metal Products, Ltd., Windsor, Ontario

A New Sales Approach For Pumps

Dissatisfaction with present distribution methods may emphasize direct sales approach.

Industry looks ahead to a competitive year, but order backlogs are still healthy.

Most companies look for prices to rise, or at worst to hold level with 1957.

■ The pumps and compressors industry may be on the threshold of a new approach to sales: Selling direct, rather than through manufacturers representatives, jobbers, and dealers.

As the industry looked ahead to a competitive year, some dissatisfaction was evident with the sales results produced by long-established methods. What to do about it was

mentioned as one of the big problems facing the industry this year.

"New Methods" Studied—"Marketing through normal distribution channels, ie. manufacturing representatives, jobbers, and dealers, is becoming increasingly more difficult," said one company.

"New methods of distribution (to our company) will be studied; additional field salesmen will be employed; and increased promotion and advertising will be utilized," said another.

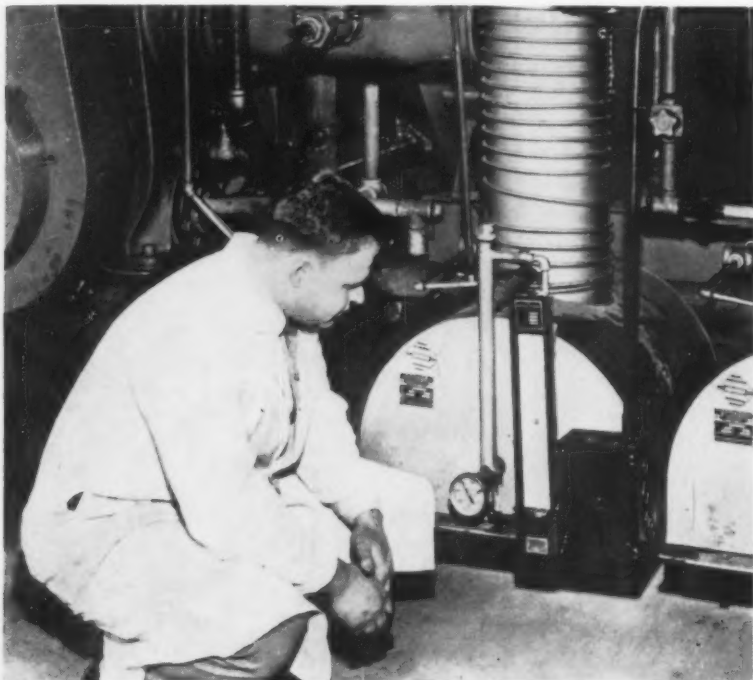
Backlogs Healthy—The industry's order backlogs were still healthy, although down 13 pct from year-end 1956. On a weighted basis (employment of responding companies), backlogs at the end of 1957 stood at 87 days, compared with 100 days a year earlier.

Also on a weighted basis, year-

end inventories of raw materials were down from 1956, according to 40 pct of survey respondents; 31 pct reported finished goods inventories were off. Some 25 pct said that raw materials and finished goods stocks were above year-end '56.

Prices And Profits—Industry opinion on the outlook for prices tallied fairly closely with the average for 17 industries covered by The IRON AGE survey. Some 39 pct of those replying to the questionnaire said they expect prices to rise about 6 pct. Nine pct said prices will be down about 7 pct. The balance looks for a sidewise movement.

Nearly 50 pct of those replying to the survey expect profits to be down about 20 pct, while 26 pct look for a rise of about 12 pct. On sales, a slight plurality of 36 pct forecast a rise of about 10 pct.



F. J. Stokes Corp. photo

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"There will be increasing pressure to improve present line of equipment and develop new lines or modification of old ones. New methods of distribution (to our company) will be studied; additional field salesmen will be employed; and increased promotion and advertising will be used. All to gain a larger share of a decreased market potential." **J. L. Hylton, Manager Market Research, Roots-**

Continued

And Compressors?

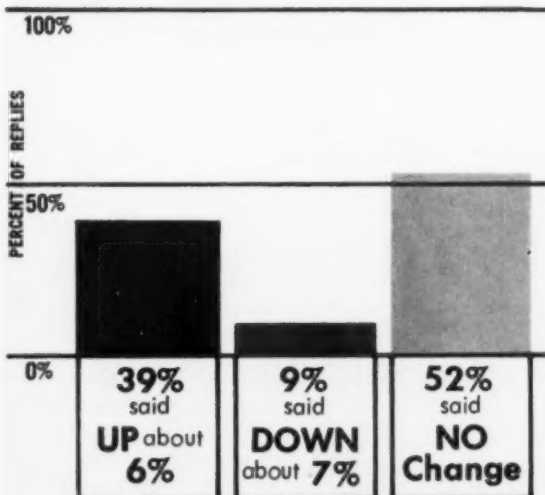
SIC 3561

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	38%	42%
100 to 249	38%	42%
250 and over	24%	16%

SELLING PRICES

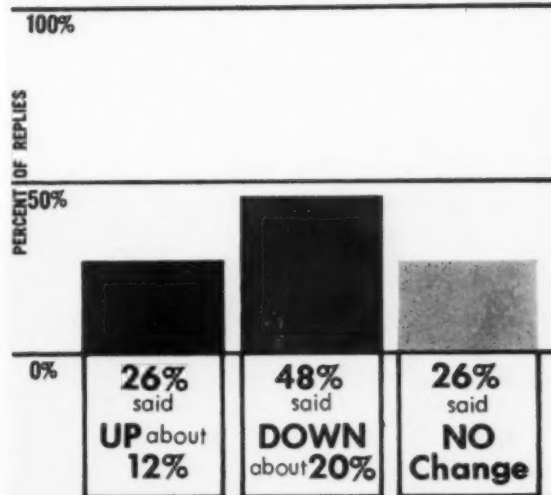
What's the trend?



PROFITS

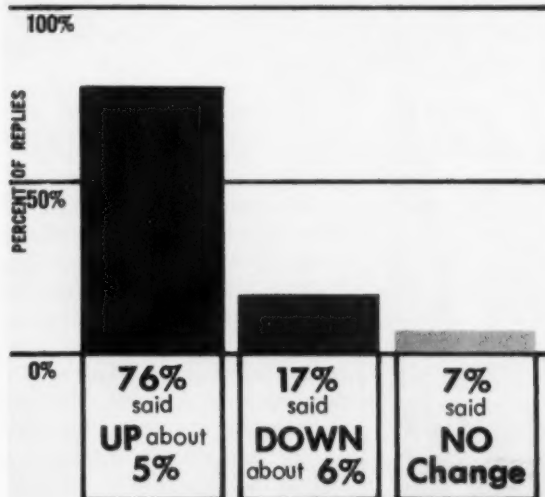
SIC 3561

How will they compare with '57?



WAGE COSTS

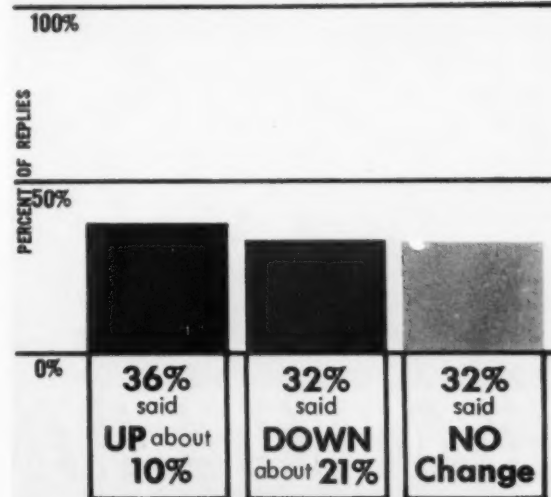
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3561

How will it compare with '57?





Malleabrasive reduces overall cleaning costs as much as 50% because—

- It wears 2 to 4 times longer than ordinary shot and grit.
- It increases output of cleaned castings.
- It reduces wear on machine parts and cuts machine down time.

These are not just claims. You can prove these savings right in your own plant, in your own machines. We supply all the necessary forms and instructions.

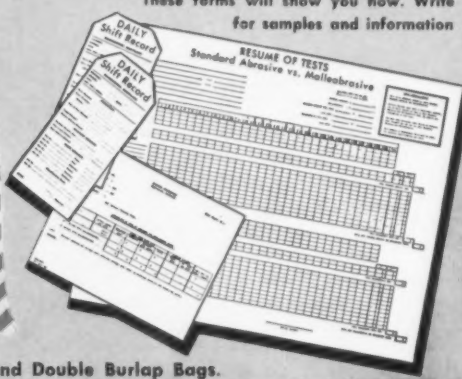
Malleabrasive has reduced costs in more than 800 plants. Why not yours?

make your own 30 day test...

These forms will show you how. Write for samples and information



In easy to handle 50-pound Double Burlap Bags.



MALLEABRASIVE
THE GLOBE STEEL ABRASIVE CO., MANSFIELD, OHIO ®

Pumps, Compressors

Continued

Connersville Blower Corp., Connersville, Ind.

"Possibly compression of various gases — possibly new chemicals requiring special gas compressors and also centrifugal pumps. Cut in expansion of capital goods will result in less volume." **E. R. Snovel, President, Pennsylvania Pump & Compressor Co., Easton, Pa.**

"Competition tougher." **C. M. Hoover, President, Columbiana Pump Co., Columbiana, Ohio.**

"The greater output requirements of machinery portend higher working pressures to achieve more efficient systems." **J. W. Wursthorn, President, Cleveland Hydraulic Co., Cleveland.**

"In general we expect larger industrial companies to purchase more cautiously at least during first part of '58. In our own case, however, we look for new products to more than offset this." **Benjamin Pierce, General Manager, Berry Div., Oliver Iron & Steel Corp., Corinth, Miss.**

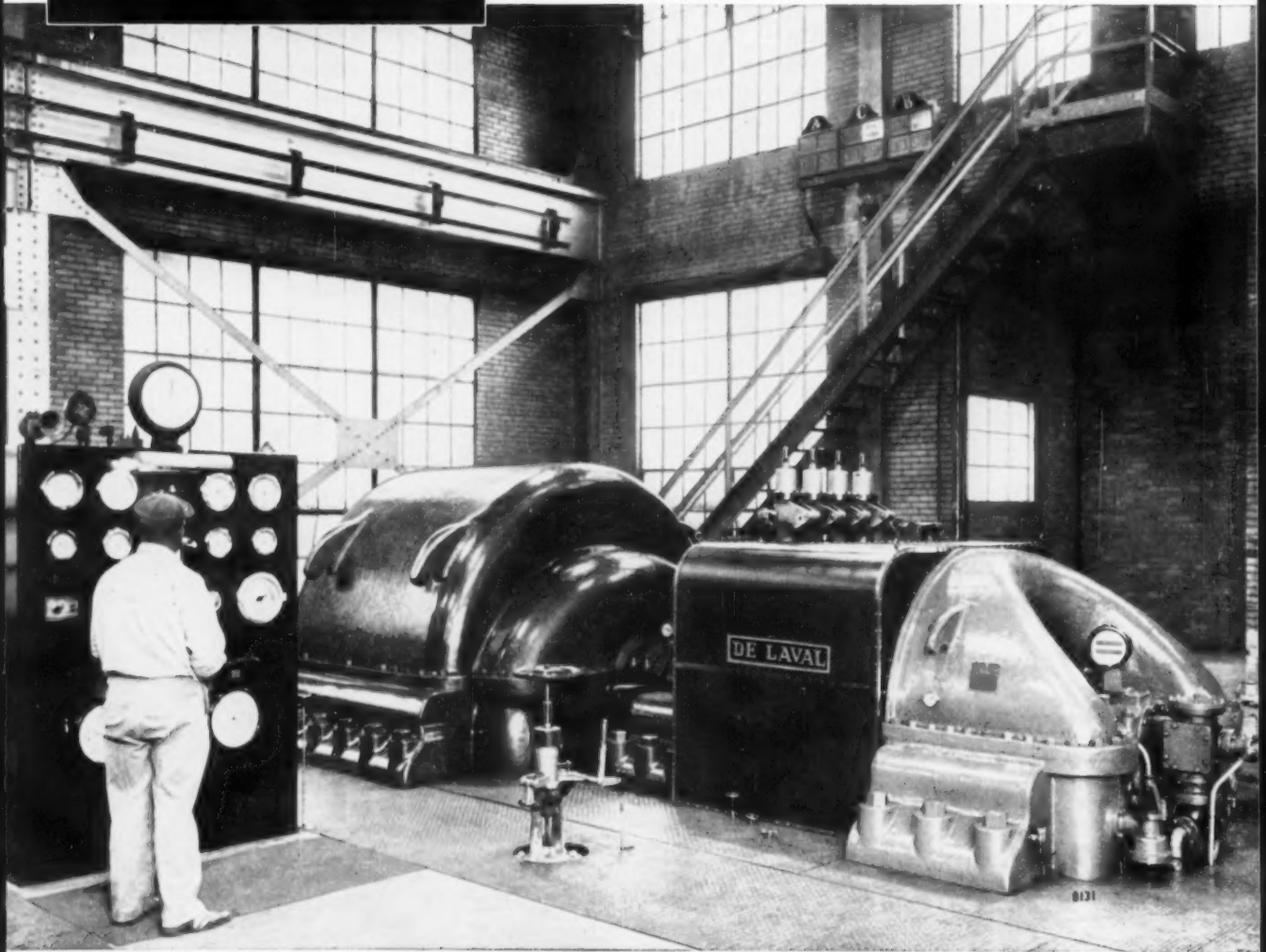
"Additional stress must be placed on quality of product during the manufacturing cycle. Improved delivery on service parts sales will, we believe, assist the sale of new equipment."

"Must analyze policy of more manufacturers setting up own sales outlets."

"Marketing through normal distribution channels (ie: manufacturers representatives, jobbers and dealers) is becoming increasingly difficult. The trend toward eliminating the jobber or dealer is becoming more prevalent. The decision as to how to cope with this problem will have a big effect on our industry this coming year and, in fact, has already influenced our sales picture this year.

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BLOWERS

*give 20 years of service
at Great Lakes Steel Corp.*



Shown is one of two De Laval centrifugal blast furnace blowers at the Ecorse, Michigan, plant of the Great Lakes Steel Corporation, Division of National Steel Corporation. This 85,000 cfm unit was installed twenty years ago; another 75,000 cfm unit went on the line a year earlier. Both have given dependable round-the-clock service ever since. These turbine-driven blowers are hooked up to a multi-head which enables either one to be

used in conjunction with any of the three blast furnaces.

De Laval centrifugal blowers are built in single and multi-stage types to supply air in volumes up to 150,000 cfm for all classes of service in steel, gas and coke plants. The wealth of application experience acquired by De Laval over the years assures a correct and economical solution to your blower problem.



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DE LAVAL Centrifugal Blowers

DE LAVAL STEAM TURBINE COMPANY
899 Nottingham Way, Trenton 2, New Jersey

Automotive Will Call Turn in

How the automotive market holds up will have important bearing on steel forgings.

Forgers fear more work will go to captive shops. Defense and road building needs may help sales.

Backlogs are off by 40 pct compared to year-end '56.

■ How sales of steel forgings hold up this year depends to a great extent on Detroit. More than any other market influence, the makers of steel forgings say the automotive industry is in a position to call the turn in 1958.

Of major concern to forgings suppliers is the fear that automakers will pull more production into their own shops. Other factors they see affecting the steel forgings market

are: changing defense requirements in view of increased emphasis on guided missiles; the road building program; competitive products and materials; and the extent of railroad modernization.

Selling Prices Up — Just how these market factors will balance each other out is still too early to tell. But as things look now only 16 pct of the industry's executives see a 13 pct rise in sales volume this year. This compares with an overall industry average of 28 pct who see higher sales of 10 pct.

Selling prices for steel forgings will rise pretty much in line with other reporting industries. Forty pct of steel forgings executives say prices will rise about 4 pct next year; 26 pct see a 5 pct drop and 34 pct predict no change.

Profits for the industry will be down 17 pct according to 58 pct

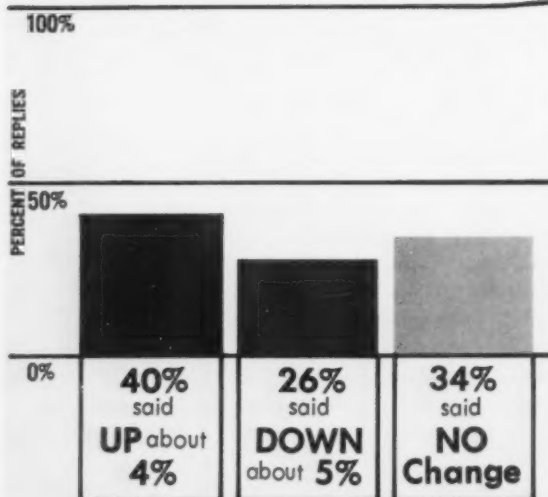
of those answering the survey; 22 pct predict no change and a minority of 19 pct say profits will top 1957 by 11 pct.

Backlogs Off — Industry leaders don't foresee higher wage costs as much as other reporting industries. Fifty-eight percent of the steel forgings makers predict higher wage costs of about 4 pct; as compared with 76 pct of all reporting industry executives who claim they'll go up about 5 pct.

Weighted figures based on company employment show that order backlogs for the steel forgings makers fell 40 pct—from 107 to 64 days in the past year. Weighted inventory figures show raw materials inventories for 58 pct of the companies below those of year-end 1957, only 7 pct report higher inventories.

SELLING PRICES

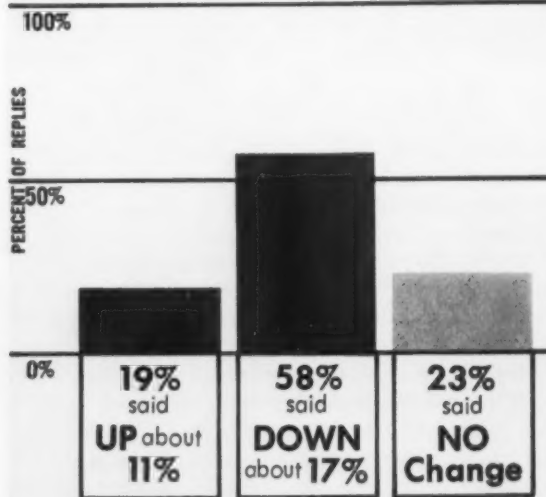
What's the trend?



PROFITS

SIC 3391

How will they compare with '57?



Steel Forging Sales



Marion Forge Div. photo

SIC 3391

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	30%	52%
100 to 249	39%	30%
250 and over	31%	18%

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

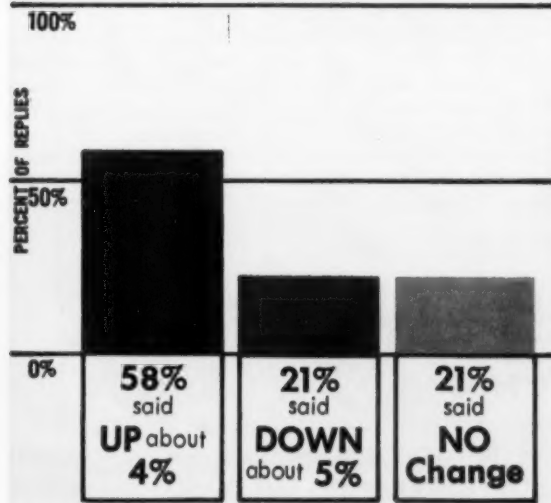
"Continued 'make-all—buy-nothing' policy of automotive manufacturers will force more and more essential commercial drop forging manufacturers to the wall. In time of national emergency this is a short sighted policy." **R. L. Refior, President,** Lansing Drop Forge Co., Lansing, Mich.

"The trend to lower passenger cars results in some increase in requirements of our products." **J. E.**

Continued

WAGE COSTS

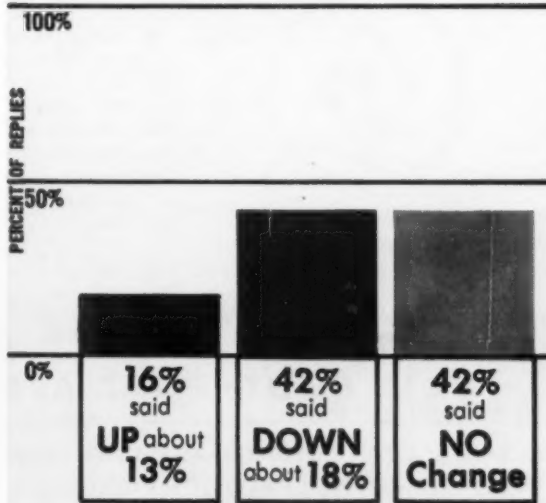
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3391

How will it compare with '57?





USE FINKL DIE BLOCKS FOR QUALITY FORGINGS



... the automotive industry does!

An upstate New York forge shop specializes in the forging of crankshafts, knuckles, and other high production items used in automotive production. Because the volume of each particular forging is very high, it is possible to evaluate costs and study tooling very closely.

In the illustration above, the manufacturer is using Durodi for both the blocking and finishing crankshaft impressions in this forging press operation.

Durodi, made by Finkl electric furnace quality steel practice is a high volume producer and a most practical hot work tool for close die forgings. It hardens deeply and uniformly, is resistant to abrasion and withstands both shock and impact loading at high hardness. Its Special Machining Quality also appreciably reduces sinking time. All of these advantages mean more production at less cost.

Finkl die blocks are available in several grades, all sizes and tempers to handle virtually any forging requirement. Call your local Finkl representative next time you are considering die blocks or forgings. He will be glad to help you and there is no obligation.



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Steel Forgings

Continued

Martin, President, Dana Corp., Toledo.

"No appreciable changes except widespread price cutting by some segments of the industry." **H. E. Markland, President**, Faleen Drop Forge Co., Manistee, Mich.

"Very keen competition both from captive and jobbing shops by automating parts of their production lines." **J. B. Enos, Controller**, Webb Forging Co., Inc., Belleville, Mich.

"Competitive materials, poor industry-wide marketing, insufficient knowledge of costs." **C. E. Stone, President**, Interstate Drop Forge Co., Milwaukee.

"Competitive products—like shell molding, powdered metals precision castings. Also captive forge shops handling more, and companies—

particularly automotive — buying less." **A. M. Cornell, Chairman of Board**, Cornell Forge Co., Chicago.

"Further modernization of railroad facilities and freedom of the industry from stifling regulations." **R. T. Reilly, President**, Conley Frog & Switch Co., Memphis.

"Development and marketing of new lines." **A. T. Serfert, Manager of Mfg.**, Brewer-Titchner Corp., New Milford, Pa.

"Getting better trade recognition for forgings and for the forging industry."

"Defense preparation." **Wm. Guse, President**, Composite Forgings Inc., Detroit.

"Shell mold castings—primarily of crankshafts, will hurt."

"The development of missiles and the cutback of jet engine orders." **C. S. McWilliams, President**, McWilliams Forge Co., Inc., Rockaway, N. J.

"Further installations of power units fueled by nuclear energy will present unusual demands on the metals industries." **A. O. Schaefer, President**, Pencoyd Steel & Forge Co., Philadelphia.

"Unfair competition."

"Developing a few new products and salewise rejuvenating an old line where no sales effort had been for years."

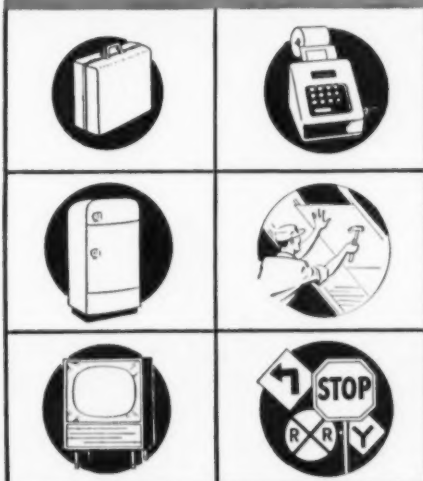
"Road program will pull industry up."

"Do not know what development or marketing problem can help our industry except continued high production throughout the heavy industries and continued defense work."

"Small inventories for our customers. Crash program for missiles. In general a larger number of smaller orders, in a bigger rush." **O. F. Forge, Vice President**, Western Forge & Flange Co., San Jose, Calif.

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Industrial Products Division

THE MASLAND DURALEATHER CO., Dept. 1A, Amber and Willard Sts., Philadelphia 34, Pa.

Steel Founders See Little To Cheer

Industry expects the worst on earnings and sales in '58. Competition sharpens pencils.

Order backlogs are off 46 pct from year ago. Most look for price drops or "no change" despite higher costs.

Meeting competition seen as industry's most pressing problem in year ahead.

■ Steel foundries take a dim view of earnings and sales in the year ahead. The industry looks for a period of tough competition accompanied by pencil-sharpening on bids.

Apparently the steel founders look for no overnight shift in the economic tradewinds. They've taken a good hard look at their prospects and found them wanting.

Behind The Gloom—On the surface, at least, there's some reason for the gloom. The founders have seen their order backlogs drop from 113 days at the end of 1956 to 61 days at the close of last year, a decline of 46 pct. This was one of the biggest declines among the industries surveyed.

On earnings prospects, the founders were more than mildly downcast. A whopping 67 pct said they expect profits to be off 27 pct from last year. Some 18 pct look for better earnings, while the balance expect to come out about the same as in 1957.

Price Outlook — Another telling point brought out in the survey is that 13 pct of the founders expect their prices will drop, while 58 pct look for no change. Only 29 pct predict higher prices (about 5 pct

higher). In view of expected higher wages and materials costs, the tough price outlook ties in with the poor prospects on earnings.

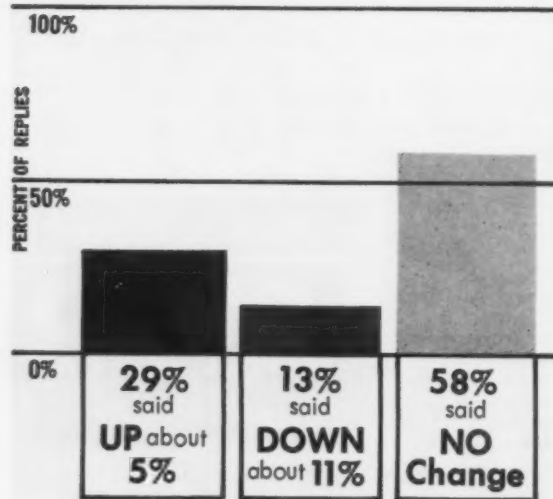
On a weighted average, some 30 pct of reporting companies said their raw materials inventories were down from year-end 1956. Another 16 pct said they were carrying higher inventories. The balance reported their stocks were about the same as in '56.

Biggest Problem—Meeting competition in the face of higher wages and lower volume of business cropped up most often as the most pressing problem facing the industry in 1958. Compounding the problem, said some, was an expected increase in freight rates, which would be a deterrent to expansion of marketing area.

Speed up of the roadbuilding program is a hoped-for development.

SELLING PRICES

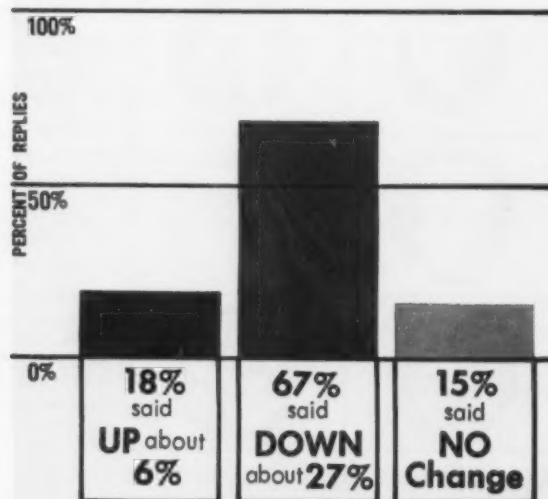
What's the trend?



PROFITS

SIC 3323

How will they compare with '57?



About in Year Ahead

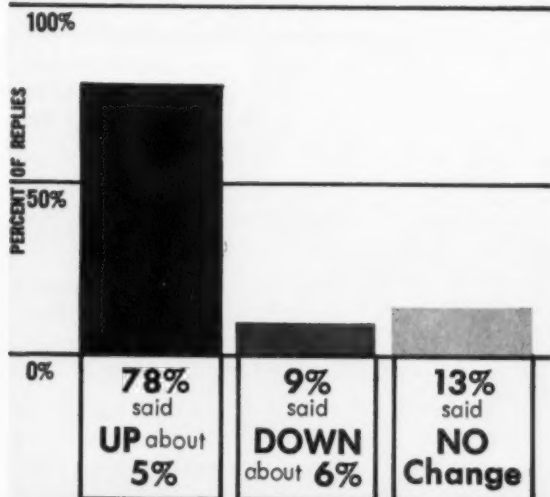
SIC 3323

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	16%	21%
100 to 249	33%	39%
250 to 499	31%	24%
500 and over	20%	16%

WAGE COSTS

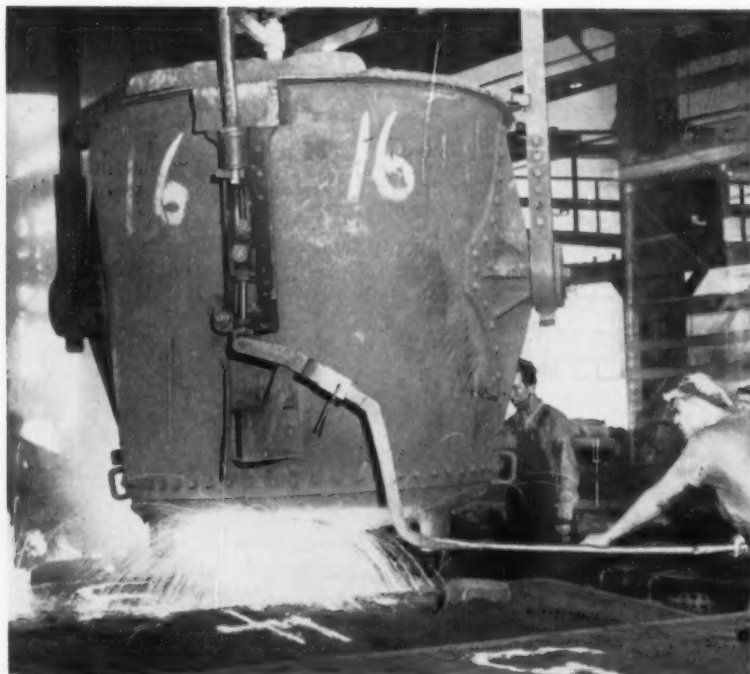
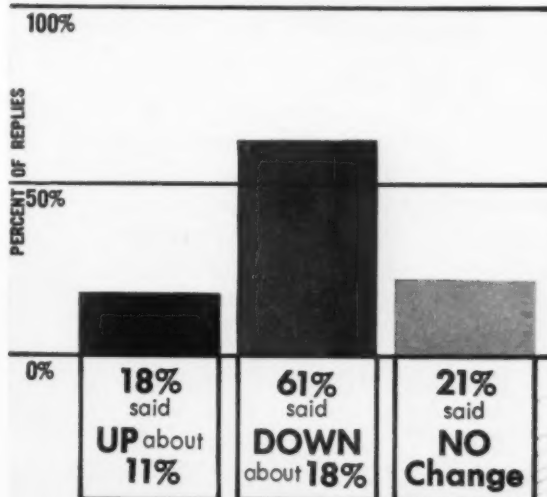
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3323

How will it compare with '57?

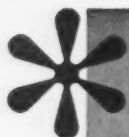


Harrison Steel Castings Co.

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

"We expect our increased volume in 1958 to come entirely from increased sales effort. Because we are a producer of semi-finished components, we must maintain a minimum inventory of both raw and finished goods. General outlook: 1st quarter 1958 slow; 2nd quarter improved; 3rd quarter very good, 4th quarter starting to slip. Competition will not permit more than very limited price increases during 1958. Labor will get some



TABLES

to help you select
the proper alloy for
your casting specs

ALLOYED PRINCIPALLY TO MEET CORROSIVE CONDITIONS														
CHARACTERISTICS	UNIT OF MEASURE	CA 15	CA 16	CA 17	CA 18	CA 19	CA 20	CA 21	CA 22	CA 23	CA 24	CA 25	CA 26	CA 27
Weight	lb/cu in.	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275
Shrinkage Allowance for Pattern Construction	in./in.	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Electrical Resistance at 20°C	ohm-ft	457	462	467	472	477	482	487	492	497	502	507	512	517
Specific Heat	Btu/lb. °F	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Thermal Conductivity	Btu/in. °F	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4
Physical Properties at Room Temperature														
Tensile Strength	psi	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Yield Strength	psi	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Elongation	%	10	10	10	10	10	10	10	10	10	10	10	10	10
Modulus of Elasticity	psi	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000
Average Maximum Temperature at which Alloy Can Normally be Used without Excessive Oxidation	°F	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Strength at Elevated Temperature														
1000°F	psi	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
1200°F	psi	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
1400°F	psi	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
1600°F	psi	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
1800°F	psi	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2000°F	psi	500	500	500	500	500	500	500	500	500	500	500	500	500
Thermal Expansion	in./in. °F	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
70°-212°F		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
70°-1000°F		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
70°-1800°F		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
70°-2000°F		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0

*from pages 6 and 7 of our new General Catalog, No. 3354-G

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Steel Foundries

Continued

increases but not as much as in 1957." **R. L. Gilmore, President & General Manager**, Superior Steel & Malleable Castings Co., Benton Harbor, Mich.

"Anticipate tougher competition. Our labor contract is for two years, 1957 and 1958. Next year's increase limited to cost of living index increase or a maximum of 4 pct, whichever is greater by Mar. 31, 1958." **E. R. Hamton, Chairman of Board**, Olympic Steel Works, Seattle.

"New molding methods." **Walter Miller, President**, Keokuk Steel Casting Co., Keokuk, Iowa.

"Acceleration of road building program." **A. M. Slichter, President**, The Pelton Steel Casting Co., Milwaukee.

"Marketing problem will be one of meeting competition with higher wages and a lower volume of available business. An increase in freight costs will also tend to shorten our market." **C. P. Caldwell, President**, Caldwell Foundry & Machine Co., Birmingham, Ala.

"Stabilization of wages, progress in road program."

"Substitution of other materials and price cutting." **W. J. Shive, Sales Manager**, Sterling Steel Casting Co., Inc., Monsanto, Ill.

"New metal applications should increase sales."

"We are emphasizing the service, or 'engineered castings,' approach to develop business now going to other methods."

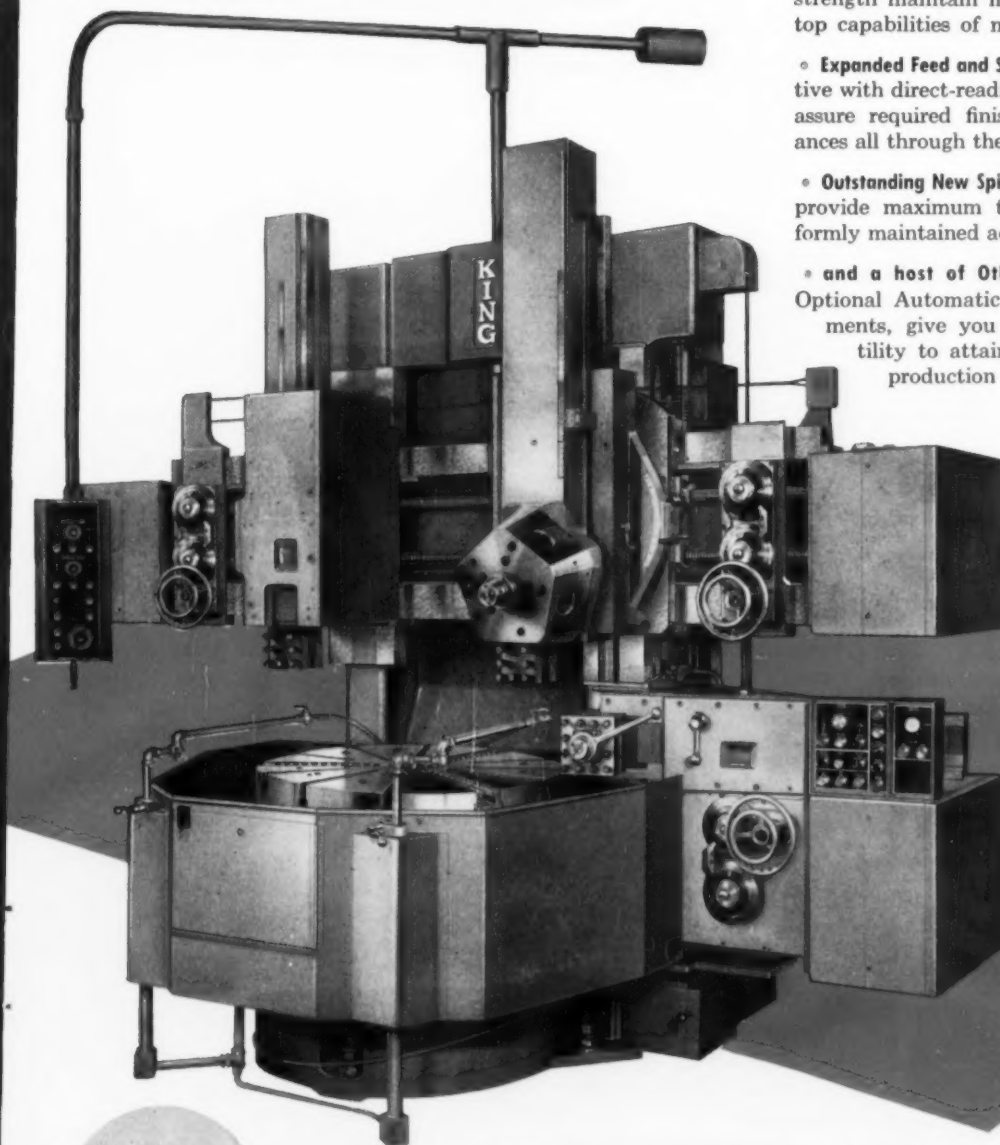
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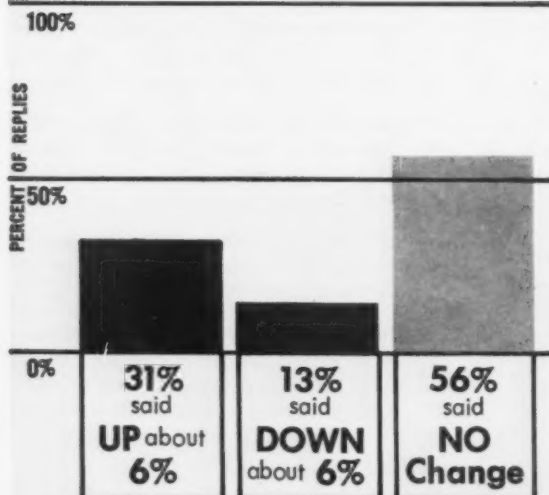
AMERICAN STEEL FOUNDRIES, KING MACHINE TOOL DIVISION
1150 TENNESSEE AVENUE, CINCINNATI 29, OHIO

KING Vertical Boring and Turning Machines

Execs Predict Higher Sales For

SELLING PRICES

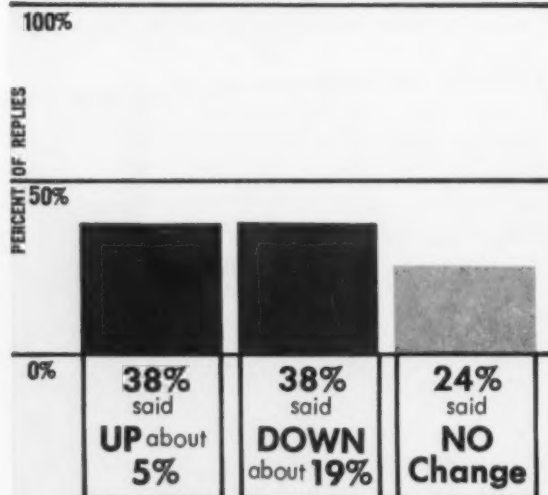
What's the trend?



PROFITS

SIC 3617 +

How will they compare with '57?



Welding equipment makers are generally more optimistic than others about the '58 market.

Over 50 pct say sales will top last year. Opinion differs from most other industries.

Order backlogs held up better than most in '57 but still dropped about 24 pct.

■ Welding equipment sales stand a good chance of topping 1957 volume. Fifty-six percent of the welding equipment makers reporting on the 1958 outlook say they expect sales to rise an average of 8 pct. Thirty-eight percent look for sales to fall off about 15 pct and 6 pct don't see much change one way or the other.

This is in sharp contrast with re-

ports from all 17 industries covered in the survey. Only 28 pct of all industry executives queried looked for higher sales this year—ranging about 9 pct. Thirty-two percent foresee a 15 pct drop and 40 pct predict no change.

Profits, too, look more promising for welding equipment manufacturers. Thirty-eight percent say they'll be up about 5 pct; an equal number see them dropping 19 pct; and 24 pct predict no change.

Wages Will Rise—If profits of the welding equipment industry are to go up they'll have to overcome an anticipated rise in wage costs. An overwhelming 88 pct of the welding equipment executives expect to pay an average of 4 pct more in wages next year.

One answer to the generally more optimistic outlook for this industry may lie in its backlogs. Of all 17

reporting industries only three others say their backlogs have suffered less in the past year. From 71 days at the end of 1956, welding equipment order backlogs fell to 54 days at year's end—a slip of 24 pct. Thirteen other industries say backlogs are off 30 to 53 pct compared with 1956.

Drive Down Inventories—It looks like the industry made a drive to lower raw materials stocks last year. Not one firm said they were higher at the end of 1957 than at the end of 1956. Eighty-six percent reported lower backlogs; 14 pct said they were about the same.

Finished goods inventories were about the same for 59 pct of those questioned; 33 pct reported lower stocks of finished goods.

To give a true picture, these backlog and inventory figures were weighted on the basis of employment of responding companies.

Welding Equipment



Linde Air Products Co.

SIC 3617 +

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	36%	44%
100 and over	64%	56%

Industry executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1958?"

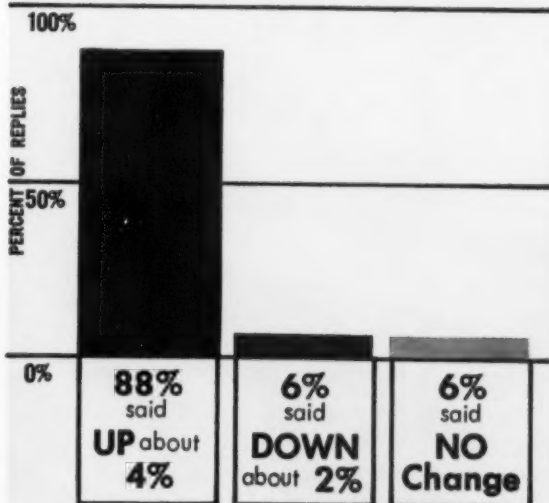
"Missile production for defense purposes, automotive sales, aircraft production, foreign pricing and market conditions." **S. M. Zelsy, Gen. Sales Mgr., Weldaloy Products Co., Van Dyke, Mich.**

"Sputnik."

"Reduction of inventions and reduction in company indebtedness. Less buying on the cuff, less building of empires on O.P.M. which is now non-existent." **E. J. Henke,**

WAGE COSTS

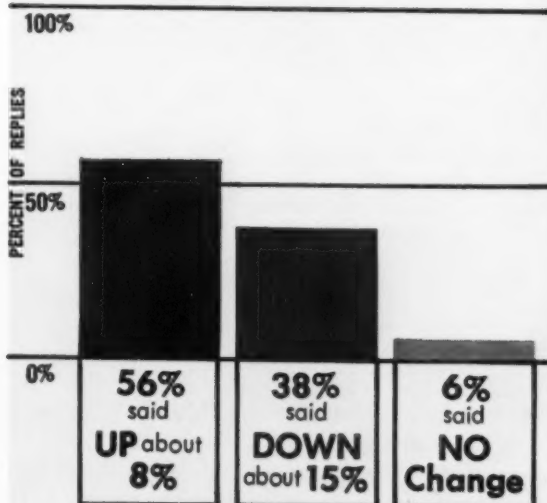
How much, if any, will wage costs increase?



SALES VOLUME

SIC 3617 +

How will it compare with '57?



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Continued

President, American Electric Fusion Corp., Chicago.

"Since our business of special machinery manufacturing is dependent upon industrial design changes necessitating capital equipment expenditures, our market in 1958 will be determined to a large extent upon the demand for new products and design changes on present products. Obsolescent present tooling, due to technical development in the interest of cost reduction, will also be important to our industry."

B. E. Long, President, Cayuga Machine & Fabricating Co., Depew, N. Y.

"Road building program and new plant expansion."

"More Automation."

"The I. C. B. M., Atomic energy and nuclear engines will be major factors." **Maurice Sciaky, Vice-President, Sciaky Bros. Inc., Chicago.**



"The Safety Director says you're accident prone, Smith. I'd like to think differently . . ."

New Diesel-Electric "Power Package" Does Both Jobs Economically

① GENERATES TRUCK MOTIVE POWER

**2 DIRECT-DRIVES
HYDRAULIC
PUMP**



Ready-Power Model RD9DX Diesel-Electric Unit with "power package" equipment. Tractive power is supplied on demand by a specially designed generator with separate excitation which produces only the energy required to do the job.

Ready-Power makes diesel-electric power doubly effective with a newly developed "power package" designed specifically for use with its "RD" Series Power Units. This remarkable new concept allows the unit to operate at *constant speed*, no load to full load, yet supplies full range of tractive power on demand and produces continuous hydraulic power without need for intermediate electric motors. The last word in simplicity, this new "power package" eliminates contactor failure, minimizes maintenance, assures maximum operating economy for electric trucks up to 200,000 lb. capacities. Write for complete information.

READY-POWER

The READY-POWER Co., 3822 GRAND RIVER AVE., DETROIT 8, MICH.

Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

"We switched over to Columbia- so far we've saved \$2,100

*says Mr. Bernard Rosebrough
Plant Engineering Project Coordinator
McCulloch Motors Corporation
Los Angeles 45, California*



"We'd tried four other degreasing solvents, so I have a real basis for comparison. For example, in the 22 weeks since putting in Columbia-Southern Trichlorethylene, we've cleaned out each of our six units just once. With all the other solvents used, our degreasers needed cleanout and fresh solvent every three weeks. We now make one changeover, instead of eight for the same period. Our net savings on man-hours for maintenance alone, without counting loss of production, adds up to \$2,100.

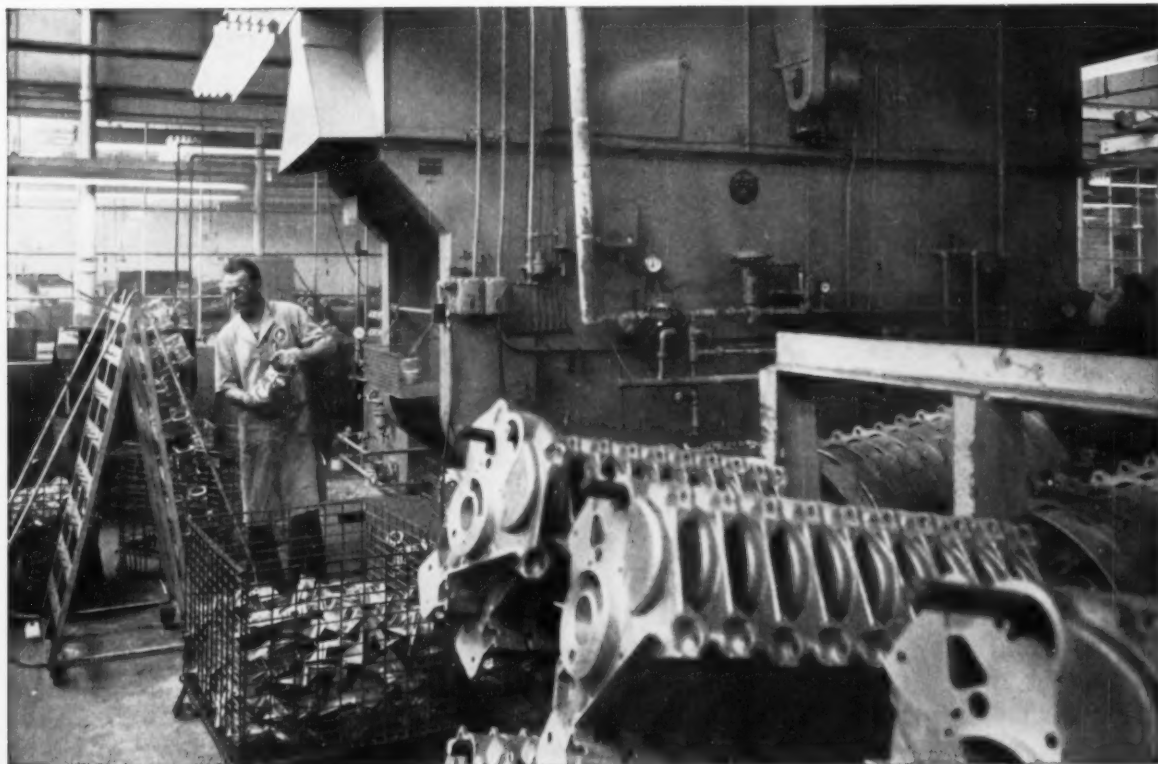


"Here's the plant, at 6101 West Century Boulevard. We produce our own line of McCulloch Chain Saws, Scott-Atwater Outboard Motors, Superchargers for custom cars, and four-cylinder drone engines for military target ships.



"This is the Model 55, one of our most popular chain saws. We run magnesium, aluminum and steel parts through the degreasers in producing all of our saws and other products. That's one reason why we insist on high solvent uniformity and purity.

Southern Trichlor 22 weeks ago— just on maintenance alone!"



"Here's the 'big boy' of our six degreasing units. It's part of our sub-assembly operation. You can imagine what happens to production when it's shut down for cleanout. Figure two men for 16 hours to do a complete drain, clean, refill—see why I like a solvent that keeps a degreaser like this in action? Another big point. A year ago we had a fire in this unit that caused more than \$6,000 damage. We believe that Columbia-Southern Trichlorethylene's stability makes it a safer solvent, and reduces fire hazard to a minimum.

"Look like I'm sold on one particular solvent? Well, how about this: Columbia-Southern's Trichlor lets us operate our units ten degrees higher than we felt safe in going with any other solvent tested here. You know what this means: more contaminant saturation, faster cleaning, less solvent used. And I like the dependable delivery and good servicing the jobber and Columbia-Southern's District Sales Office provide."

For more information, contact our Pittsburgh address or any of the fourteen Columbia-Southern District Sales Offices

**COLUMBIA-SOUTHERN
CHEMICAL CORPORATION**
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER, PITTSBURGH 22, PENNSYLVANIA



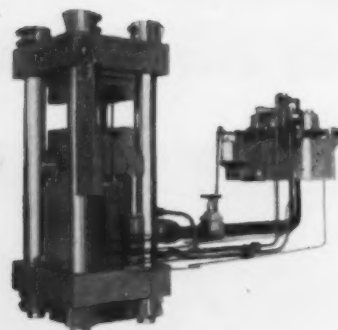
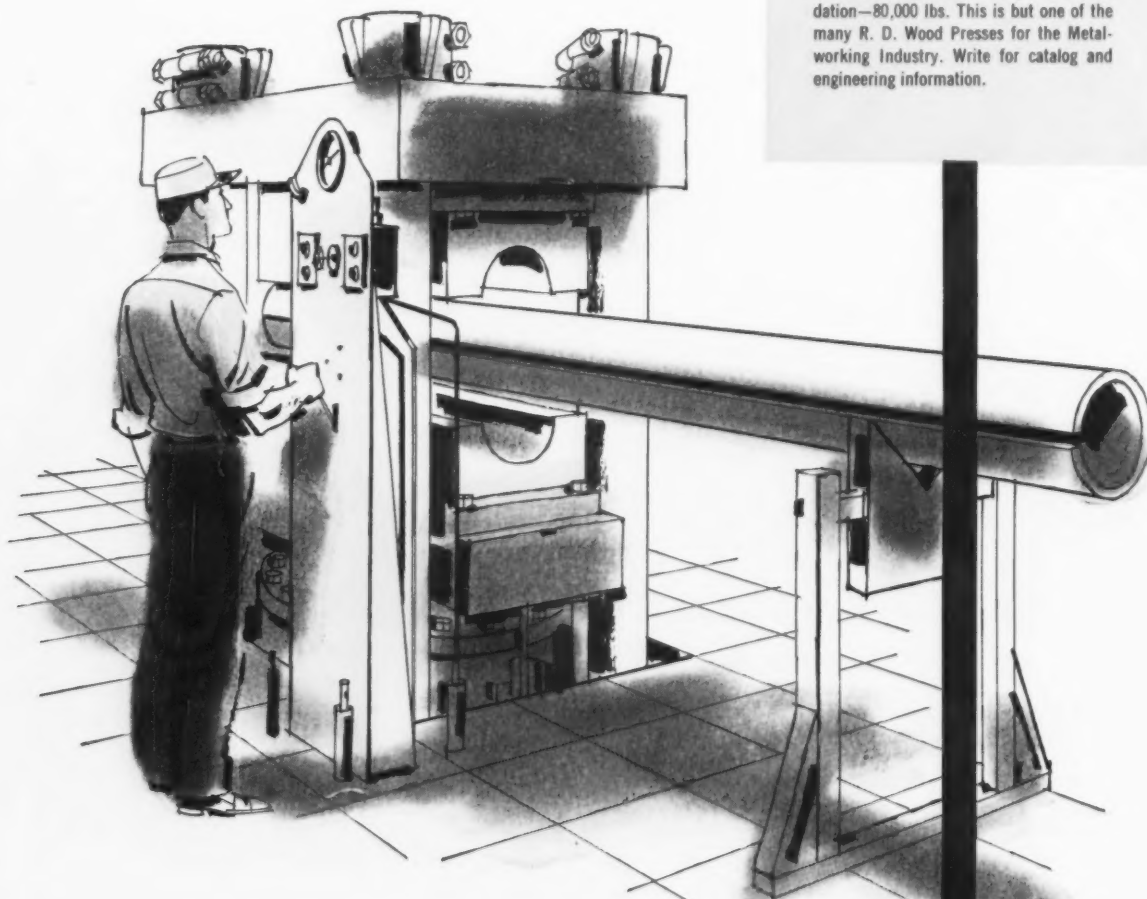
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IN CANADA: Standard Chemical Limited
and its Commercial Chemicals Division



You can design your own press at R. D. Wood

Working with numerous basic models, R. D. Wood engineers incorporate your specifications and modifications to produce the press exactly suited to your needs. You can be sure of its quality, too. For every Wood Press is constructed of selected materials by master craftsmen. This is your warranty of dependable performance and precise operation. Why not consult us when planning your next hydraulic press?



1500 ton R. D. Wood Hydraulic Press for pipe forming operations. Press has self-contained pumping unit. Dies can be replaced for various sizes of pipes ranging from 4" to 12". Floor space, press proper—5' x 6'. Height—13'. Weight on foundation—80,000 lbs. This is but one of the many R. D. Wood Presses for the Metalworking Industry. Write for catalog and engineering information.



R. D. WOOD COMPANY

PUBLIC LEDGER BUILDING • PHILADELPHIA 5, PENNSYLVANIA

The Next Decade: Can Business Gain 40 Pct?

Yes—If Some Changes Are Made

By B. B. Geyer—Chairman, Executive Committee,
Geyer Advertising, Inc., New York

Like a super long-range airplane, our economy depends on speed for its buoyancy; it must be refueled in flight.

Though it may stop for a breather, capital goods spending is essential if we are to hit our '65 target.

With tax changes, the goal is possible without inflation.

■ We can have a gross national product of more than \$600 billion a year by 1965 if we are willing to start now to do something about it. This potential gain of more than 40 pct above the current level is stated in constant dollars.

To achieve it, the capital goods industries must keep growing. For if we made only consumer goods, and if consumer income came only

from such production, they would not have enough money to buy all the goods produced.

Changes Needed — Proof for these statements is presented here, not by theories, but by actual figures. We shall show that some changes will have to be made if industry is to secure the money it needs to expand. These involve changes in taxes, depreciation rules,

Whether we like it or not . . .

John Doe—was born in the late nineties. His life was built around some basic concepts that in his day were accepted as desirable. He won the respect, envy and admiration of his neighbors by paying his bills promptly, by liquidating the mortgage on his home, by having something put away for the future.

Richard Roe—is his current counterpart. He has won the respect, envy and admiration of his neighbors by parking a new car, on which he has made the first payment, in front of a mortgaged house filled with mortgaged furniture, and so long as he meets the minimum payments on his television, refrigeration, home freezer, automatic washer, electric range, the ring on his wife's finger, and the trip he took to Hawaii last year, he is everything expected of a good citizen.

And So—Whether this is good or bad, right or wrong is beside the point. The contrast shows how our social and economic standards have changed.



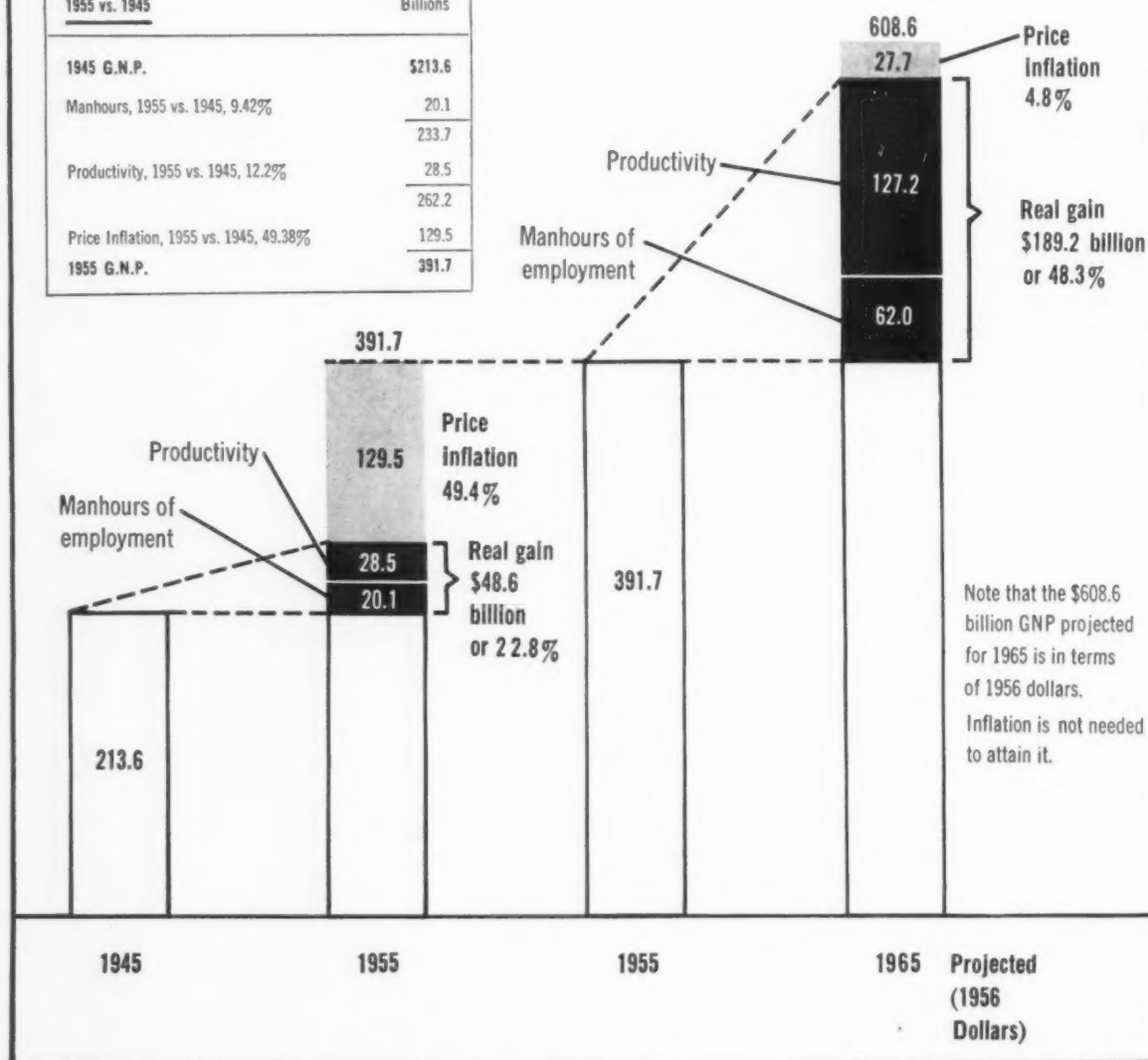
We Can Have a \$600 Billion Economy by 1965

Here are the factors that make up Gross National Product: Manhours of employment, productivity and inflation, 1945 vs. 1965.

(Billions of dollars)

1955 vs. 1945	Billions
1945 G.N.P.	\$213.6
Manhours, 1955 vs. 1945, 9.42%	20.1
	233.7
Productivity, 1955 vs. 1945, 12.2%	28.5
	262.2
Price Inflation, 1955 vs. 1945, 49.38%	129.5
1955 G.N.P.	391.7

1965 vs. 1955	Billions
1955 G.N.P.	\$391.7
Manhours, 1965 vs. 1955, 15.8%	62.0
	453.7
Productivity, 1965 vs. 1955, 28.03%	127.2
	580.9
Price Inflation, 1965 vs. 1955, 4.8%	27.7
1965 G.N.P.	608.6



Federal Reserve and Treasury regulations.

We have an economy that depends on speed for its buoyancy, an economy that must be refueled in flight. During the past decade we have seen changes in living standards, buying habits, wage rates and the promise of security—changes that can only come from further growth.

Of course, inflation caused much of the gain in gross national product during the past decade. Yet the major incentive offered to millions of Americans—both by business and by government—is a promise of security. Security and inflation are not compatible. With our whole social and economic system built on the security concept, one thing is clear: Future growth had better be without benefit of inflation. Living costs shot up by 50 pct during the past 10 years. If this goes on the result will be nothing short of runaway inflation. (see chart)

Consider This—The penalty for saving, since 1933, has been equal to more than 3 pct a year, compounded annually.

There is no way to restore the value of the dollar to its 1945 value, or even its 1950 value. That would mean major cuts in wages, prices, profits and gross national product.

But, to hold prices at somewhere near the present level calls for the understanding and cooperation of every part of our society.

To keep a balanced economy we must recognize the importance of the factors that put purchasing power into the hands of consumers without at the same time creating consumer goods.

Five Areas—The five factors which must supply this extra consumer buying power are:

1. Private new construction.
2. Outlays for producers' durable equipment.
3. Excess of exports over imports.

4. Increase in business inventories.

5. Federal government cash deficit.

The sum of these factors during the past 27 years has averaged 18 pct of gross national product. A comparison of 1946-1955 with a projection of these elements through 1965 could be as shown in the chart, "Extra Consumer Buying Power."

This expansion of plant and equipment will call for a lot of outside capital.

Revise Tax Laws—At present allowable rates of amortization, such spending for non-financial corporations alone would require \$72.9 billion more than the total of charge-offs and retained earnings, after taxes and fair dividends. This points up the need to revise tax laws to provide accelerated amortization of production facilities.

However, private debt (which also affects the supply of these needed funds) grew from \$140 billion in 1945 to \$415.7 billion in 1956. In other words, it has about kept pace with gross national product. Whether it can be held about equal to it through 1965 depends on the needed increase in equity financing, amortization allowances and changes in tax rules.

The debt already incurred for growth can be justified only by a continuation and acceleration of that growth. As we have seen, this will require a great deal of outside capital, of equity financing.

Bonds vs. Stocks—If such financing is to be encouraged, there must be tax changes to reduce the wide difference in net cost between tax-

The New Economy—Forecasts in this article have been made on the premise that the past decade is not episodic. That it is rather the living pattern of a new economy that can offer far more in the coming years than any era of the past.

exempt interest and after-tax dividends.

Such is the character of our economy. It is dynamic and it must remain so. Fully to understand why this is the case, we refer back to 1929, to a time when our business, personal and political lives were guided by an entirely different concept.

Prior to the thirties we believed in certain physical things which could be depended upon and used as fixed goals. One was the gold standard—you could exchange a dollar for gold at \$20.67 an ounce. Along with this belief in the fixed value of the dollar there were others around which people could order their lives with some degree of confidence. Being out of debt was one of them. Saving for a rainy day was another. Individual self-dependence was still another.

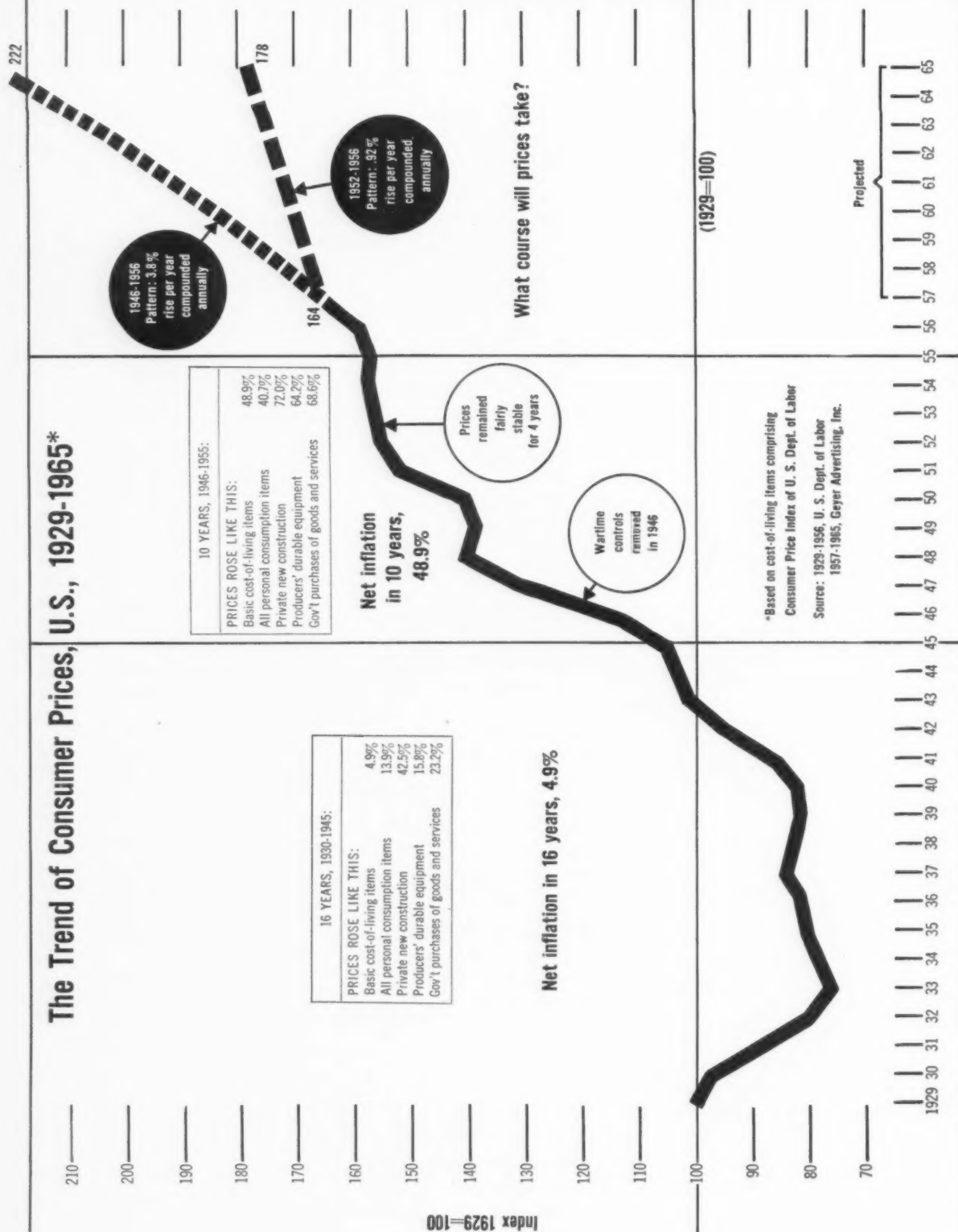
Boom and Bust—But an economy that tried to hold such ideals as fixed objectives was subject to inevitable cycles of prosperity and depression.

The concept that became a new economic and political formula in the early thirties was a complete reversal of the old values. It envisioned full employment as a fixed factor. All other values became secondary and contributory to that one objective. With this factor

The Author—Bertram B. Geyer, is chairman of the executive committee of Geyer Advertising, Inc., which he founded in 1911. His agency has been identified with many of the growth industries of the past 40 years,

including farm electrification, automatic refrigeration, the automobile industry, and many of the great developments in medical research. In 1942 he wrote a postwar forecast which called the turn on postwar developments with remarkable accuracy.

The Trend of Consumer Prices, U.S., 1929-1965*



Plant and Equipment Outlays vs. Internal Sources of Funds

all Nonfinancial Corporations, U. S., 1929-1965

17 YEARS, 1929-1945:

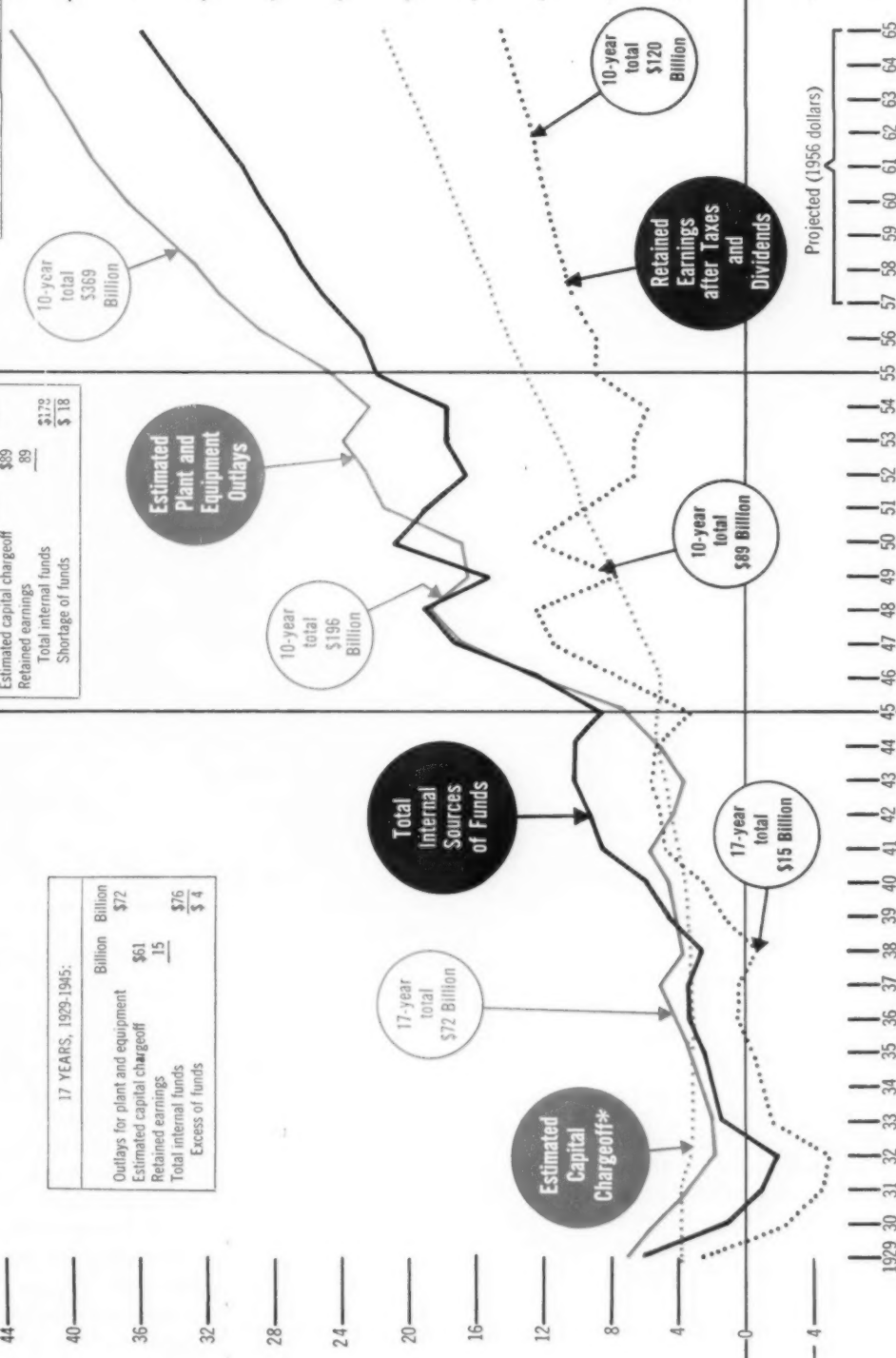
	Billion	Billion
Outlays for plant and equipment	\$72	
Estimated capital chargeoff	\$61	
Retained earnings	15	
Total internal funds	\$76	
Excess of funds	\$ 4	

10 YEARS, 1946-1955:

	Billion	Billion
Outlays for plant and equipment	\$39	\$196
Estimated capital chargeoff	89	
Retained earnings		\$178
Total internal funds		\$ 18
Shortage of funds		

10 YEARS, 1956-1965:

	Billion	Billion
Outlays for plant and equipment	\$176	\$369
Estimated capital chargeoff	120	
Retained earnings		\$296
Total internal funds		\$ 73
Shortage of funds		

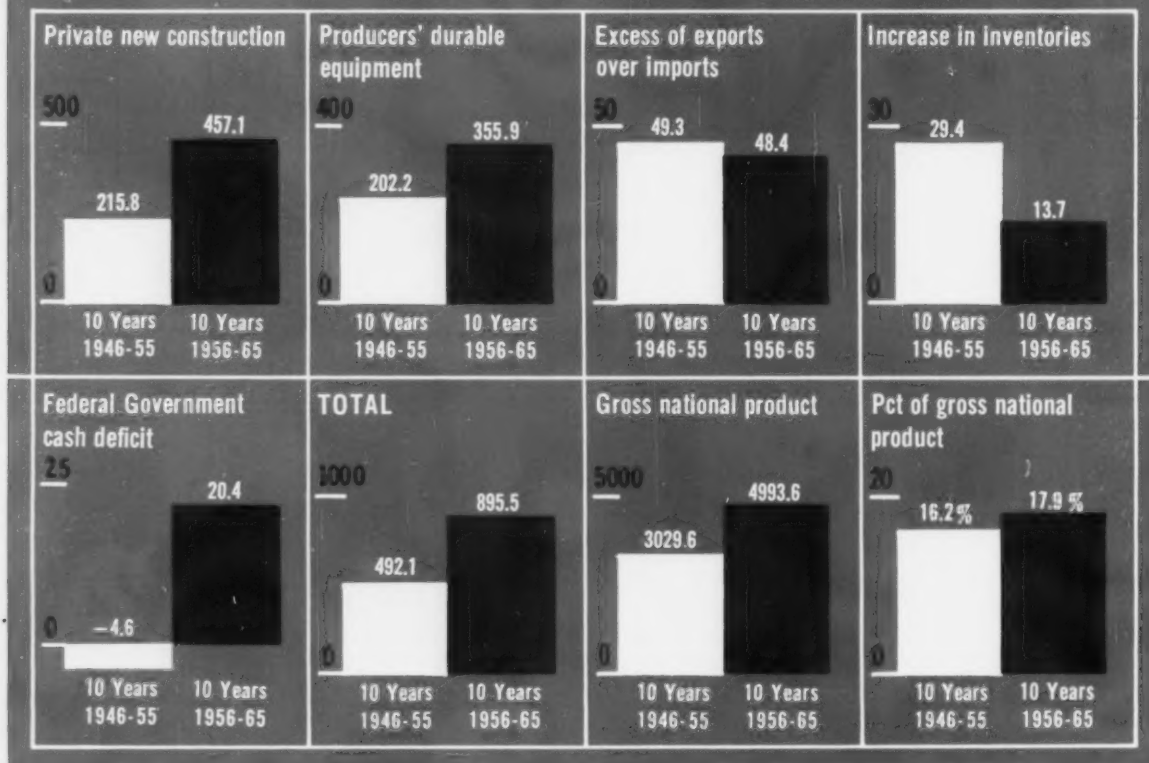


*Chiefly depreciation, depletion, and amortization allowances

Source: Geyer Advertising, Inc. estimates based on available information from U. S. Government and private sources.

Extra Consumer Buying Power— Where Does It Come From?

Billions of Dollars



The Road Ahead

Continued

fixed, all other factors such as a balanced budget, the value of the dollar and the limiting of debt became flexible.

This concept was changed significantly and became law in the Employment Act of 1946. That Act declared it to be the continuing policy of the Federal Government to coordinate and use all its functions and resources to promote maximum employment, production and purchasing power, **within the framework of free competitive enterprise.** This latter phrase was the significant change, one which some people seem to overlook.

Master or Servant—We are in the second decade of a gigantic experiment. We are trying to find out whether money can be the servant instead of the master, whether the

time has come when social goals can be achieved within the framework of free competitive enterprise. We seek to do this in a continuous growth pattern—without the awful periods of readjustment, deflation, depression, and hardship that seemed inevitable in the past.

This is the challenge to business, to government, to education, to labor, and to an enlightened public.

Never before have there been so many facts available for all to use.

Never before have we had such a wealth of new materials, new discoveries, new products, new ideas from the research laboratories of the world.

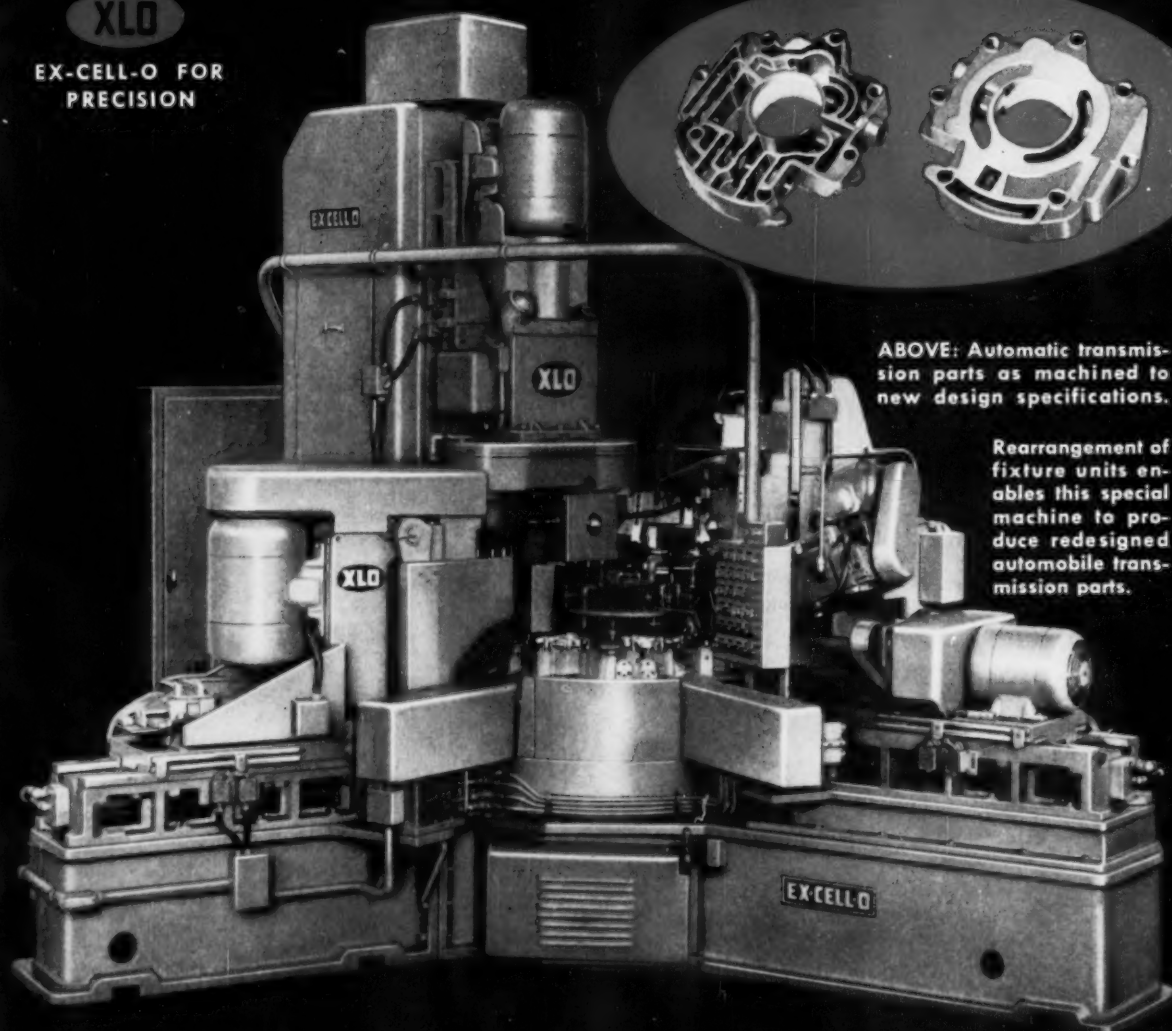
Never before have we had such progress in the social sciences to guide our relationships with each other.

Standards Are Rising—In ten years our population will increase

over 18 pct. Educational standards will be advanced. With that advance will come more demands for a higher standard of living and the products that contribute to it.

Our nation is working toward a rich goal. Every sector of our economy must have its eyes on that goal. When problems appear in finance, in business, in government, in labor, or in the relationship, one with another, they must be solved on the basis that every selfish interest is best served by the accomplishment of our total objective, and that no temporary gain could be worthwhile if it interfered with our progress or interrupted our growth.

Reprints of this article are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., THE IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.

XLO**EX-CELL-O FOR
PRECISION**

ABOVE: Automatic transmission parts as machined to new design specifications.

Rearrangement of fixture units enables this special machine to produce redesigned automobile transmission parts.

Parts changes didn't obsolete this special

Easily Adapted to Altered Workpieces

The first big parts change to come along will obsolete many a special machine—at a drastic cut into the production budget! But not so with this Ex-Cell-O special now operating at full tilt in an automobile plant in Detroit.

Built to process regulator valve bodies for automotive transmissions, this special machine was flexible enough to adapt to certain changes in tooling and operational cycles. Right now, it's turning out complicated parts at the rate of 120 per hour.

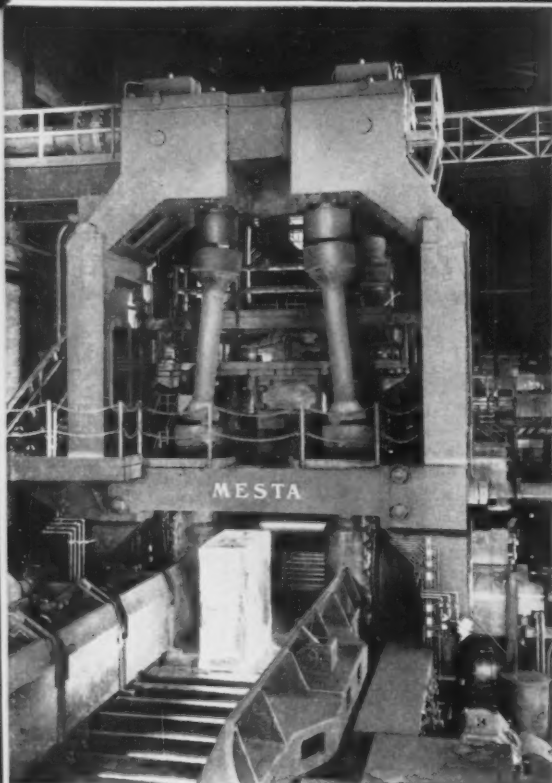
Machining includes fly-cutting both flat sides of aluminum part; drill and ream two piston holes; drill three

angular holes; drill, ream and chamfer the top holes. Flatness of the two sides is an important requirement.

Ex-Cell-O specials have the extra precision you have come to expect of XLO products. Why not check with your Ex-Cell-O representative today? Or write Ex-Cell-O, Detroit.

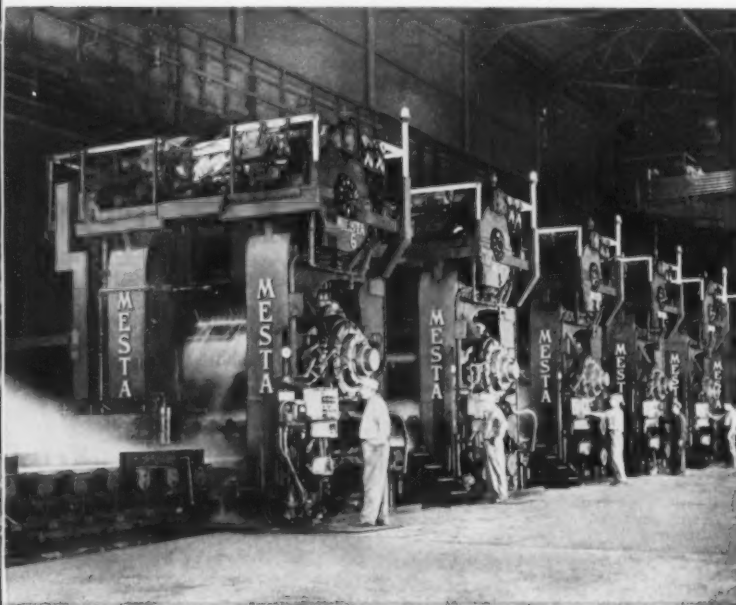
EX-CELL-O Machinery
CORPORATION Division
DETROIT 32, MICHIGAN

MANUFACTURERS OF PRECISION MACHINE TOOLS • GRINDING AND BORING SPINDLES • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

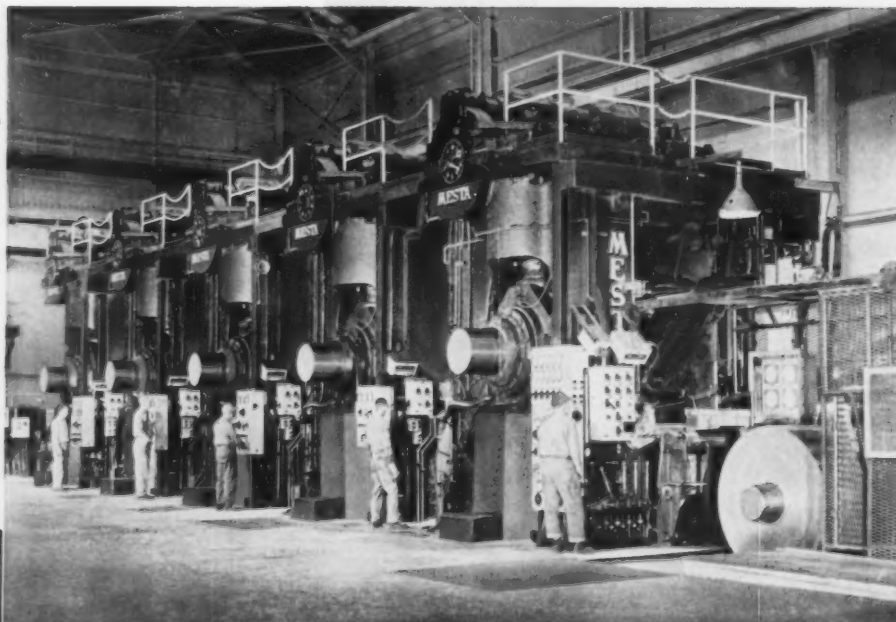


Rolling 20 Ton Ingots into Slabs
on a MESTA 45" x 90" Universal
Reversing Slabbing Mill

MESTA 60" Four-High Hot Strip Mill Finishing Stands



MESTA



MESTA 48" Four-High Five Stand
Tandem Cold Mill Rolling Strip
Steel for Tin Plate in Coils

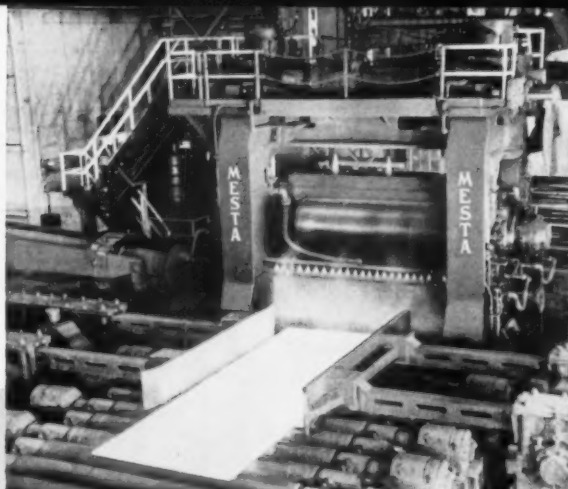


THERE IS NONE BETTER

MESTA 2000 FPM Continuous Cleaning and Annealing Line for Steel Strip in Tin Plate Gauges with Pay-Off Reels, Mash Welder, and Tension Reels



Two MESTA 48" Continuous Galvanizing Lines with Feed Reels, Straighteners, and Mash Welders



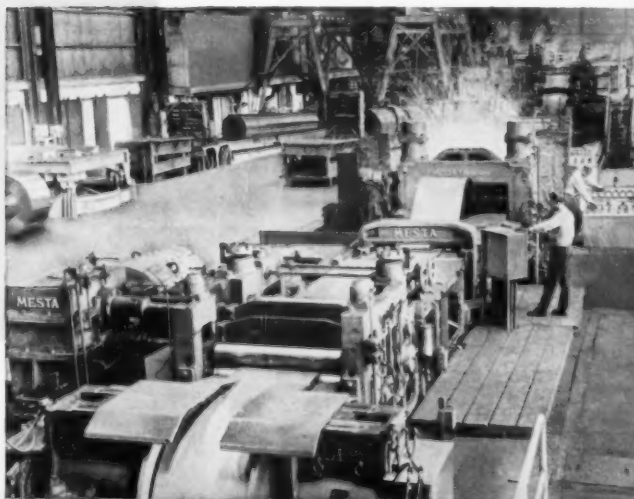
MESTA 160" Four-High Reversing Plate Mill



MESTA 60" Sheet Shearing Line with Trimmer and Combination Rotary Flying Shear and Leveller

*Designers
and Builders
of
Complete
Steel Plants*

MESTA 48" Continuous Pickling Line with Primary and Secondary Processors, Flash Welder, Up-Cut Shears, Side Trimmer, and Up-Coiler



MESTA MACHINE COMPANY
PITTSBURGH, PENNSYLVANIA

IT ALL STARTS HERE . . .



C & D Dependability

**every C & D Hot Top
is engineered
specifically to its job**

A specialized engineering know-how customizes every C & D Hot Top to its job. C & D service follows through in your plant to give the maximum in sound killed steel—ingots uniform in quality—deliveries as required. In short—DEPENDABILITY—every time—since 1929.

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OGLEBAY NORTON COMPANY
1400 HANNA BUILDING
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Market Guide To Major Consumers Of Stainless And Nonferrous Metals

If you are in the business of selling stainless steel and nonferrous metals you can't afford to be without this useful marketing tool.

For here are the most complete and up-to-date figures on the metalworking market for: Stainless steel mill shapes and forms; Aluminum and aluminum alloy mill shapes, forms and castings; Copper and copper alloy mill shapes, forms and castings.

Prepared by The IRON AGE Research Dept., and not available elsewhere, these tables show: The number of tons consumed by each industry of each product; dollar value of these shipments; and the number of plants in each consuming industry.

Some of the industry consumption figures may surprise you. But all should be of help in planning your sales effort.

Stainless Steel Mill Shapes and Forms

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Short Tons	Value (\$1000)			
1900 ¹	Ordnance & Accessories	2,694	3,767	n.a.	--	117
2514	Metal Household Furniture	973	967	402,575	\$ 2.40	207
2591	Restaurant Furniture	2,874	1,195	36,751	\$32.52	23
3421	Cutlery	5,527	5,227	169,750	\$30.29	109
3422	Edge Tools	40	36	69,721	\$.52	83
3423	Hand Tools	526	592	256,991	\$ 2.30	216
3425	Hand Saws & Saw Blades	32	35	83,682	\$.42	44
3429	Hardware, nec.	26,576	22,296	1,111,529	\$20.06	411
3431	Metal Plumbing Fixtures & Fittings	2,100	1,930	443,260	\$ 4.35	225
3439	Heating & Cooking Apparatus	7,508	6,917	1,146,608	\$ 6.03	466
3441	Structural & Ornamental Prods.	3,477	3,254	1,809,971	\$ 1.80	942
3442	Metal Doors, Sash & Trim	9,565	8,426	638,501	\$13.20	336
3443	Boiler Shop Products	12,878	18,278	1,133,670	\$16.12	541
3444	Sheet-Metal Work	7,873	9,145	738,481	\$12.38	840
3461	Vitreous-Enameled Prods.	173	161	65,523	\$ 2.46	53
3463	Metal Stampings	61,991	60,574	1,727,544	\$35.06	987
3471	Lighting Fixtures	6,388	5,443	641,569	\$ 8.48	259
3491	Metal Barrels, Drums & Pails	554	698	217,239	\$ 3.21	77
3493	Steel Springs	65	78	115,692	\$.67	36
3494	Bolts, Nuts, Washers & Rivets	6,963	7,843	699,523	\$11.21	211
3495	Screw Machine Products	3,922	4,060	401,449	\$10.11	506
3511	Steam Engines & Turbines	6,194	6,336	450,041	\$14.08	22
3519	Internal Combustion Engines	1,260	1,312	891,027	\$ 1.47	76
3521	Tractors	170	155	1,177,974	\$.13	40
3522	Farm Mach. (except tractors)	1,787	2,056	1,095,685	\$ 1.88	419
3531	Constr. & Mining Machinery	1,049	1,194	1,132,333	\$ 1.05	400
3532	Oilfield Mch. & Tools	1,770	1,767	513,383	\$ 3.44	183
3542	Metalworking Machinery	699	859	839,899	\$ 1.02	322

All data in this section based on 1954 Census of Manufactures

Continued on following page

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1000)	Consumpt'n Per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Short Tons	Value (\$1000)			
3543	Cutting Tools, Dies, Gauges, Accessories	410	635	1,408,246	\$.45	1130
3551	Food-Products Machinery	10,515	12,189	404,261	\$30.15	294
3552	Textile Machinery	2,699	3,606	336,785	\$10.71	216
3553	Woodworking Machinery	39	53	167,160	\$.32	192
3554	Paper-Industries Machinery	1,575	2,453	196,635	\$12.47	140
3559	Special-Industry Mchy., nec	8,289	10,071	580,515	\$17.35	344
3561	Pumps & Compressors	3,701	3,729	890,873	\$ 4.19	308
3562	Elevators & Escalators	394	465	161,024	\$ 2.89	71
3563	Conveyors	803	993	479,224	\$ 2.07	169
3564	Blowers & Fans	1,104	1,213	261,825	\$ 4.63	100
3565	Industrial Trucks & Tractors	78	96	245,110	\$.39	67
3566	Power-Transmission Equip.	895	1,041	603,633	\$ 1.72	265
3567	Industrial Furnaces & Ovens	3,882	5,481	160,132	\$34.23	80
3569	General Industrial Mchy., nec	3,289	4,794	370,499	\$12.94	233
3571	Computing & Related Machines	369	441	614,265	\$.72	41
3576	Scales & Balances	254	267	64,182	\$ 4.16	37
3579	Office & Store Machs., nec	222	248	276,437	\$.90	62
3581	Domestic Laundry Equip.	1,048	978	527,535	\$ 1.85	33
3582	Laundry & Dry-Clean. Mchy.	2,010	2,311	88,065	\$26.24	74
3583	Sewing Machines	344	339	112,029	\$ 3.03	24
3584	Vacuum Cleaners	459	378	157,907	\$ 2.39	20
3585	Refrigeration Mchy.	8,664	8,717	n.a.	--	215
3589	Service & Household Machines, nec.	1,723	1,946	172,233	\$11.30	102
3591	Valves & Fittings, except plumbers	8,849	9,106	959,012	\$ 9.50	211
3592	Fabricated Pipe & Fittings	541	795	225,902	\$ 3.52	138
3611	Wiring Devices & Supplies	620	753	584,366	\$ 1.29	216
3613	Electrical Measuring Instruments	725	874	359,456	\$ 2.43	86
3614	Motors & Generators	1,811	1,982	1,389,078	\$ 1.43	192
3615	Transformers	362	404	686,087	\$.59	90
3616	Electrical Control Apparatus	2,098	2,648	1,096,715	\$ 2.41	214
3617	Electrical Welding Apparatus	5,688	7,927	168,846	\$46.95	60
3621	Electrical Appliances	7,069	7,496	795,304	\$ 9.43	168
3641	Engine Electrical Equip.	1,228	1,150	587,124	\$ 1.96	88
3661	Radios & Related Prods.	2,111	2,742	n.a.	--	636
3664	Telephone & Telegraph Equip.	1,084	1,352	797,109	\$ 1.70	38
3669	Communication Equip., nec.	68	85	100,194	\$.85	46
3713	Truck & Bus Bodies	310	384	232,514	\$ 1.65	212
3715	Truck Trailers	205	268	305,510	\$.88	75
3717	Motor Vehicles & Parts	36,082	32,990	11,000,000	\$ 3.00	704
3721	Aircraft	10,442	15,777	6,267,147	\$ 2.52	49
3722	Aircraft Engines	31,656	49,069	3,188,950	\$15.39	63
3729	Aircraft Equip., nec.	6,019	7,491	2,342,536	\$ 3.20	260
3731	Ship Bldg. & Repairing	1,215	1,425	1,077,889	\$ 1.32	160
3741	Locomotives & Parts	289	343	428,281	\$.80	17
3742	Railroad & Street Cars	6,421	6,389	495,767	\$12.89	52
3751	Motorcycles & Bicycles	1,841	1,149	95,649	\$12.01	30
3811	Scientific Instruments	911	1,208	580,916	\$ 2.08	174
3821	Mechanical Measuring Instruments	3,170	3,978	804,257	\$ 4.95	221
3914	Silverware & Plated Ware	7,498	6,067	211,083	\$28.74	84
TOTAL		371,269	408,764	63,170,430		17,373

1- The nine separate ordnance industries included in SIC
are combined in the data for Industry 1900

Aluminum and Al Alloy Mill Shapes and Forms

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1,000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1,000)			
1900 ¹	Ordinance & Accessories	24,860	15,333	na	----	117
2514	Metal Household Furniture	17,836	10,375	402,575	\$25.77	207
2522	Metal Office Furniture	3,900	1,957	202,932	\$ 9.64	74
2531	Public Building Furniture	1,412	1,104	159,545	\$ 6.92	39
2532	Professional Furniture	587	465	65,401	\$ 7.11	31
2541	Partitions & Fixtures	3,166	1,625	396,974	\$ 4.09	172
2561	Window & Door Screens	21,961	10,139	70,877	\$143.05	17
2563	Venetian Blinds	na	7,851	114,152	\$68.78	22
2591	Restaurant Furniture	243	120	36,751	\$ 3.27	23
3411	Tin Cans & Other Tinware	1,604	995	1,366,766	\$.73	154
3421	Cutlery	727	349	169,750	\$ 2.06	109
3423	Hand Tools, nec	2,143	999	256,991	\$ 3.89	216
3429	Hardware, nec.	14,143	6,830	1,111,529	\$ 6.14	411
3431	Metal Plumbing Fixtures & Fittings	9,059	2,826	443,260	\$ 6.38	225
3439	Heating, Cooking Apparatus, nec	14,637	5,970	1,146,608	\$ 5.21	466
3441	Structural & Ornamental Products	24,544	11,285	1,809,971	\$ 6.23	942
3442	Metal Doors, Sash & Trim	216,121	93,386	638,501	\$146.26	336
3443	Boiler Shop Products	3,488	1,747	1,133,670	\$ 1.54	541
3444	Sheet-Metal Work	123,193	39,872	738,481	\$53.99	840
3461	Vitreous - Enameled Prods.	3,576	1,284	65,523	\$19.60	53
3463	Metal Stampings	159,110	63,811	1,727,544	\$36.94	987
3471	Lighting Fixtures	8,563	4,657	641,569	\$ 7.26	259
3489	Wirework, nec	22,592	11,592	744,766	\$15.56	448
3491	Metal Barrels, Drums and Pails	2,535	999	217,239	\$ 4.60	77
3494	Bolts, Nuts, Washers & Rivets	11,575	5,760	699,523	\$ 8.23	211
3495	Screw Machine Products	12,871	7,084	401,449	\$17.65	506
3496	Collapsible Tubes	7,654	3,560	36,893	\$96.50	17
3497	Metal Foil	161,303 ²	46,599	180,737	\$257.83	18
3522	Farm Machinery (except Tractors)	4,656	2,479	1,095,685	\$ 2.26	419
3531	Constr. & Mining Mach.	na	830	1,132,333	\$.73	400
3541	Machine Tools	1,186	601	1,146,932	\$.52	262
3542	Metalworking Machinery	1,455	652	839,899	\$.78	322
3543	Cutting Tools, Gauges, Dies, Accessories	2,160	1,211	1,408,246	\$.86	1130
3551	Food Products Machinery	1,978	883	404,261	\$ 2.18	294
3552	Textile Machinery	1,984	1,075	336,785	\$ 3.19	216
3553	Woodworking Machinery	620	418	167,160	\$ 2.50	192
3555	Printing-Trades Mchy.	na	562	248,719	\$ 2.26	81
3559	Special-Industry Mchy., nec	883	579	580,515	\$ 1.00	344
3561	Pumps & Compressors	1,145	973	890,873	\$ 1.09	308
3564	Blowers & Fans	5,955	2,753	261,825	\$10.51	100
3566	Power-Transmission Equip.	410	297	603,633	\$.49	265
3569	General Industrial Mchy.	2,648	1,460	370,499	\$ 3.94	233
3571	Computing & Related Machs.	1,658	857	614,265	\$ 1.40	41
3572	Typewriters	229	129	173,439	\$.74	12
3576	Scales & Balances	508	262	64,182	\$ 4.08	37
3579	Office & Store Mach., nec	817	399	276,437	\$ 1.44	62
3581	Domestic Laundry Equip.	3,420	1,428	527,535	\$ 2.71	33
3582	Laundry & Dry-Clean. Mchy.	1,116	635	88,065	\$ 7.21	74
3584	Vacuum Cleaners	2,260	1,058	157,907	\$ 6.70	20

Continued on following page

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1,000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1,000)			
3585	Refrigeration Machinery	85,108	38,938	n.a.	-----	215
3586	Measuring & Disp. Pumps	566	293	116,543	\$ 2.51	30
3589	Service & Household Machs.	1,444	646	172,233	\$ 3.75	102
3591	Valves & Fittings (except Plumbers)	12,412	5,199	959,012	\$ 5.42	211
3611	Wiring Devices & Supplies	9,214	4,844	584,366	\$ 8.29	216
3613	Elec. Measuring Instrs.	4,792	2,189	359,456	\$ 6.09	86
3614	Motors & Generators	16,631	5,754	1,389,078	\$ 4.14	192
3616	Electrical Control Apparatus	5,458	2,823	1,096,715	\$ 2.57	214
3621	Electrical Appliances	13,524	6,012	795,304	\$ 7.56	168
3641	Engine Electrical Equip.	2,337	1,315	587,124	\$ 2.24	88
3661	Radios & Related Prods.	28,946	17,881	n.a.	-----	636
3664	Telephone & Telegraph Equip.	6,274	2,936	797,109	\$ 3.68	38
3669	Communication Equip., nec	244	278	100,194	\$ 2.77	46
3713	Truck & Bus Bodies	7,865	3,837	232,514	\$16.50	212
3715	Truck Trailers	49,525	24,073	305,510	\$78.80	75
3717	Motor Vehicles	36,600	16,764	11,000,000	\$ 1.52	704
3721	Aircraft	173,206	133,483	6,267,147	\$21.30	49
3722	Aircraft Engines	10,113	6,578	3,188,950	\$ 2.06	63
3723	Aircraft Propellers	828	503	210,094	\$ 2.39	11
3729	Aircraft Equipment, nec	82,725	51,501	2,342,536	\$21.99	260
3741	Locomotives & Parts	685	411	428,281	\$.96	17
3742	Railroad & Streetcars	3,216	1,898	495,767	\$ 3.83	52
3811	Scientific Instruments	2,609	1,774	580,916	\$ 3.05	174
3821	Mechanical Measuring Instruments	3,627	2,133	804,257	\$ 2.65	221
TOTAL		1,466,440	710,178	59,182,278		16,443

Aluminum and Al Alloy Castings

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1000)			
3669	Communication Equip., nec	1,912	799	100,194	\$ 7.97	46
3713	Truck - Bus Bodies	382	235	232,514	\$ 1.01	212
3715	Truck Trailers	1,073	838	305,510	\$ 2.74	75
3717	Motor Vehicles & Parts	145,925	80,333	11,000,000	\$ 7.31	704
3721	Aircraft	13,197	17,064	6,267,147	\$ 2.72	49
3722	Aircraft Engines	15,418	15,109	3,188,950	\$ 4.74	63
3723	Aircraft Propellers	522	916	210,094	\$ 4.36	11
3729	Aircraft Equipment, nec	14,752	16,025	2,342,536	\$ 6.84	260
3741	Locomotives & Parts	1,213	983	428,281	\$ 2.30	17
3742	Railroad & Street Cars	747	691	495,767	\$ 1.39	52
3811	Scientific Instruments	1,505	1,717	580,916	\$ 2.96	174
3821	Mechanical Measuring Instruments	11,812	7,803	804,257	\$ 9.70	221

Continued on following page

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1000)			
1900 ¹	Ordnance & Accessories	8,429	7,715	n.a.	--	117
3421	Cutlery	162	177	169,750	\$ 1.04	109
3423	Hand Tools, nec.	2,558	1,564	256,991	\$ 6.09	216
3429	Hardware, nec.	3,908	2,158	1,111,529	\$ 1.94	411
3431	Metal Plumbing Fixtures & Fittings	741	515	443,260	\$ 1.16	225
3439	Heating, Cooking Apparatus, nec.	3,126	1,731	1,146,608	\$ 1.51	466
3441	Structural & Ornamental Prods.	n.a.	389	1,809,971	\$.21	942
3442	Metal Doors, Sash & Trim	9,997	4,793	638,501	\$ 7.51	336
3443	Boiler Shop Products	149	184	1,133,670	\$.16	541
3444	Sheet- Metal Work	4,596	2,103	738,481	\$ 2.85	840
3463	Metal Stampings	8,517	3,928	1,727,544	\$ 2.27	987
3471	Lighting Fixtures	5,569	3,332	641,569	\$ 5.19	259
3489	Wirework, nec.	1,876	1,243	744,766	\$ 1.67	448
3494	Bolts, Nuts, Washers	438	242	699,523	\$.35	211
3495	Screw Machine Products	412	284	401,449	\$.71	506
3519	Internal Combustion Engines	26,990	21,869	891,027	\$24.54	76
3521	Tractors	5,898	4,159	1,177,974	\$ 3.53	40
3522	Farm Machinery (except tractors)	8,991	4,614	1,095,685	\$ 4.21	419
3531	Constr. Mining Equipment	n.a.	1,577	1,132,333	\$ 1.39	400
3541	Machine Tools	1,912	1,707	1,146,932	\$ 1.49	262
3542	Metalworking Machinery	6,703	5,621	839,899	\$ 6.69	322
3543	Cutting Tools, Gauges, Dies, Accessories	2,642	2,224	1,408,246	\$ 1.58	1130
3551	Food-Products Machinery	2,843	2,402	404,261	\$ 5.94	294
3552	Textile Machinery	1,569	1,139	336,785	\$ 3.38	216
3553	Woodworking Machinery	3,807	1,767	167,160	\$10.57	192
3555	Printing - Trades Mchy.	1,898	1,483	248,719	\$ 5.96	81
3559	Special - Industry Mchy., nec.	2,588	1,779	580,515	\$ 3.06	344
3561	Pumps & Compressors	4,022	4,402	890,873	\$ 4.94	308
3564	Blowers & Fans	1,383	1,103	261,825	\$ 4.21	100
3566	Power-Transmission Equip.	2,060	1,671	603,633	\$ 2.77	265
3569	General Industrial Mchy., nec.	817	864	370,499	\$ 2.33	233
3571	Computing & Related Machines	2,668	2,204	614,265	\$ 3.59	41
3572	Typewriters	4,086	2,609	173,439	\$15.04	12
3576	Scales & Balances	1,263	850	64,182	\$13.24	37
3579	Office & Store Machines, nec.	1,293	940	276,437	\$ 3.40	62
3581	Domestic Laundry Equip.	23,587	12,752	527,535	\$24.17	33
3582	Laundry & Dry Clean. Mchy.	605	415	88,065	\$ 4.71	74
3583	Sewing Machines	2,232	2,033	112,029	\$18.15	24
3584	Vacuum Cleaners	7,471	5,676	157,907	\$35.95	20
3585	Refrigeration Machinery	6,756	6,578	n.a.	--	215
3586	Measuring & Dispensing Pumps	1,378	1,057	116,543	\$ 9.07	30
3589	Service & Household Machines, nec.	2,675	2,077	172,233	\$12.06	102
3591	Valves & Fittings	2,916	2,240	959,012	\$ 2.34	211
3592	Fabricated Pipes & Fittings	321	129	225,902	\$.57	138
3611	Wiring Devices & Supplies	3,359	2,315	584,366	\$ 3.96	216
3613	Electrical Measuring Instruments	2,328	2,097	359,456	\$ 5.83	86
3614	Motors & Generators	18,093	9,377	1,389,078	\$ 6.75	192
3616	Electrical Control Apparatus	2,994	2,716	1,096,715	\$ 2.48	214
3621	Electrical Appliances	15,757	10,176	795,304	\$12.80	168
3641	Engine Electrical Equip.	1,827	1,408	587,124	\$ 2.40	88
3661	Radios & Related Products	14,930	8,267	n.a.	---	636
3664	Telephone & Telegraph Equip.	2,111	1,676	797,109	\$ 2.10	38
TOTAL		451,709	305,512	58,272,845		15,817

1 - The nine separate ordnance industries included
in SIC are combined in the data for Industry 1900

Copper and Cu Alloy Mill Shapes and Forms

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1000)			
1900 ¹	Ordinance & Accessories	157,756	74,622	n.a.	--	117
3421	Cutlery	3,730	1,813	169,750	\$10.68	109
3423	Hand Tools, nec	1,481	789	256,991	\$ 3.07	216
3429	Hardware, nec	52,906	23,603	1,111,529	\$21.23	411
3431	Metal Plumbing Fixtures & Fittings	72,759	31,687	443,260	\$71.49	225
3439	Heating, Cooking Apparatus, nec	14,916	8,685	1,146,608	\$ 7.57	466
3441	Structural & Ornamental Prods.	2,715	1,628	1,809,971	\$.90	942
3442	Metal Doors, Sash & Trim	1,494	794	638,501	\$ 1.24	336
3443	Boiler Shop Products	3,792	2,279	1,133,670	\$ 2.01	541
3444	Sheet-Metal Work	7,733	3,820	738,481	\$ 5.17	840
3461	Vitreous-Enameled Prods.	393	210	65,523	\$ 3.21	53
3463	Metal Stampings	64,167	31,055	1,727,544	\$17.98	987
3471	Lighting Fixtures	24,540	16,602	641,569	\$25.88	259
3489	Wirework, nec	20,115	10,584	744,766	\$14.21	448
3494	Bolts, Nuts, Washers & Rivets	53,979	25,382	699,523	\$36.28	211
3495	Screw Machine Parts	67,025	27,192	401,449	\$67.73	506
3511	Steam Engines & Turbines	4,568	2,577	450,041	\$ 5.73	22
3519	Internal Combustion Engines	11,626	6,257	891,027	\$ 7.02	76
3521	Tractors	3,066	1,634	1,177,974	\$ 1.39	40
3522	Farm Machinery (except tractors)	n.a.	2,641	1,095,685	\$ 2.41	419
3531	Constr. & Mining Machinery	n.a.	2,181	1,132,333	\$ 1.93	400
3532	Oilfield Mchy. & Tools	n.a.	1,265	513,383	\$ 2.46	183
3541	Machine Tools	2,668	1,605	1,146,932	\$ 1.40	262
3542	Metalworking Machinery	7,879	4,728	839,899	\$ 5.63	322
3543	Cutting Tools, Gauges, Dies, Accessories	4,218	2,353	1,408,246	\$ 1.67	1130
3551	Food-Products Machinery	2,783	1,479	404,261	\$ 3.66	294
3553	Woodworking Machinery	1,599	890	167,160	\$ 5.32	192
3554	Paper-Industries Machinery	1,706	1,042	196,635	\$ 5.30	140
3555	Printing-Trades Machinery	n.a.	1,610	248,719	\$ 6.47	81
3559	Special-Industry Machinery, nec	5,110	3,688	580,515	\$ 6.35	344
3561	Pumps & Compressors	12,639	6,994	890,873	\$ 7.85	308
3562	Elevators & Escalators	3,521	3,101	161,024	\$19.26	71
3563	Conveyors	2,515	1,819	479,224	\$ 3.80	169
3564	Blowers & Fans	4,036	2,451	261,825	\$ 9.36	100
3565	Industrial Trucks & Tractors	1,012	641	245,110	\$ 2.62	67
3566	Power Transmission Equip.	8,471	4,359	603,633	\$ 7.22	265
3569	General Industrial Mchy., nec	23,749	16,211	370,499	\$43.75	233
3581	Domestic Laundry Equip.	2,438	1,413	527,535	\$ 2.68	33
3582	Laundry & Dry Cleaning Machinery	922	489	88,065	\$ 5.55	74
3583	Sewing Machines	96	241	112,029	\$ 2.15	24
3584	Vacuum Cleaners	2,527	2,062	157,907	\$13.06	20
3585	Refrigeration Machinery	82,111	52,637	n.a.	--	215
3586	Measuring & Dispensing Pumps	2,601	1,170	116,543	\$10.04	30
3589	Service & Household Machines, nec	3,598	2,045	172,233	\$11.87	102
3591	Valves & Fittings except Plumbers	114,315	40,615	959,012	\$42.35	211
3592	Fabricated Pipe & Fittings	1,186	618	225,902	\$ 2.74	138
3611	Wiring Devices & Supplies	53,869	28,456	584,366	\$48.70	216

Continued on following page

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1000)			
3613	Electrical Measuring Instrs.	11,698	6,563	359,456	\$18.27	86
3614	Motors & Generators	174,353	85,173	1,389,078	\$61.32	192
3615	Transformers	113,201	61,996	686,087	\$90.36	90
3616	Electrical Control Apparatus	64,155	34,143	1,096,715	\$31.13	214
3617	Electrical Welding Apparatus	9,783	6,227	168,846	\$36.88	60
3619	Elec. Industrial Apparatus, nec	9,272	5,895	183,250	\$32.17	75
3621	Electrical Appliances	23,218	13,495	795,304	\$16.97	168
3641	Engine Elec. Equipment	99,704	46,061	587,124	\$78.45	88
3661	Radios & Related Prods.	82,628	47,686	n.a.	---	636
3664	Telephone & Telegraph Equip.	32,007	21,067	797,109	\$26.43	38
3669	Communication Equip., nec	2,028	1,798	100,194	\$17.95	46
3713	Truck & Bus Bodies	605	352	232,514	\$ 1.51	212
3715	Truck Trailers	2,011	1,166	305,510	\$ 3.82	75
3717	Motor Vehicles & Parts	202,239	94,079	11,000,000	\$ 8.55	704
3721	Aircraft	8,121	9,634	6,267,147	\$ 1.54	49
3722	Aircraft Engines	2,774	1,724	3,188,950	\$.54	63
3729	Aircraft Equip., nec	13,357	8,931	2,342,536	\$ 3.81	260
3731	Ship Building & Repairing	13,393	13,017	1,077,889	\$12.08	160
3732	Boat Building & Repairing	1,119	929	154,369	\$ 6.02	21
3741	Locomotives & Parts	19,141	10,668	428,281	\$24.91	17
3742	Railroad & Street Cars	4,973	2,112	495,767	\$ 4.26	52
3811	Scientific Instruments	2,828	1,880	580,916	\$ 3.24	174
3821	Mech. Measuring Instruments	37,029	19,572	804,257	\$24.34	221
3914	Silverware & Plated-Ware	28,167	13,946	211,083	\$66.07	84
3964	Needles, Pins & Fasteners	47,914	22,043	203,122	\$108.52	106
TOTAL		1,920,048	990,174	56,666,271		16,325

1 - The nine separate ordnance industries included
in SIC are combined in the data for Industry 1900

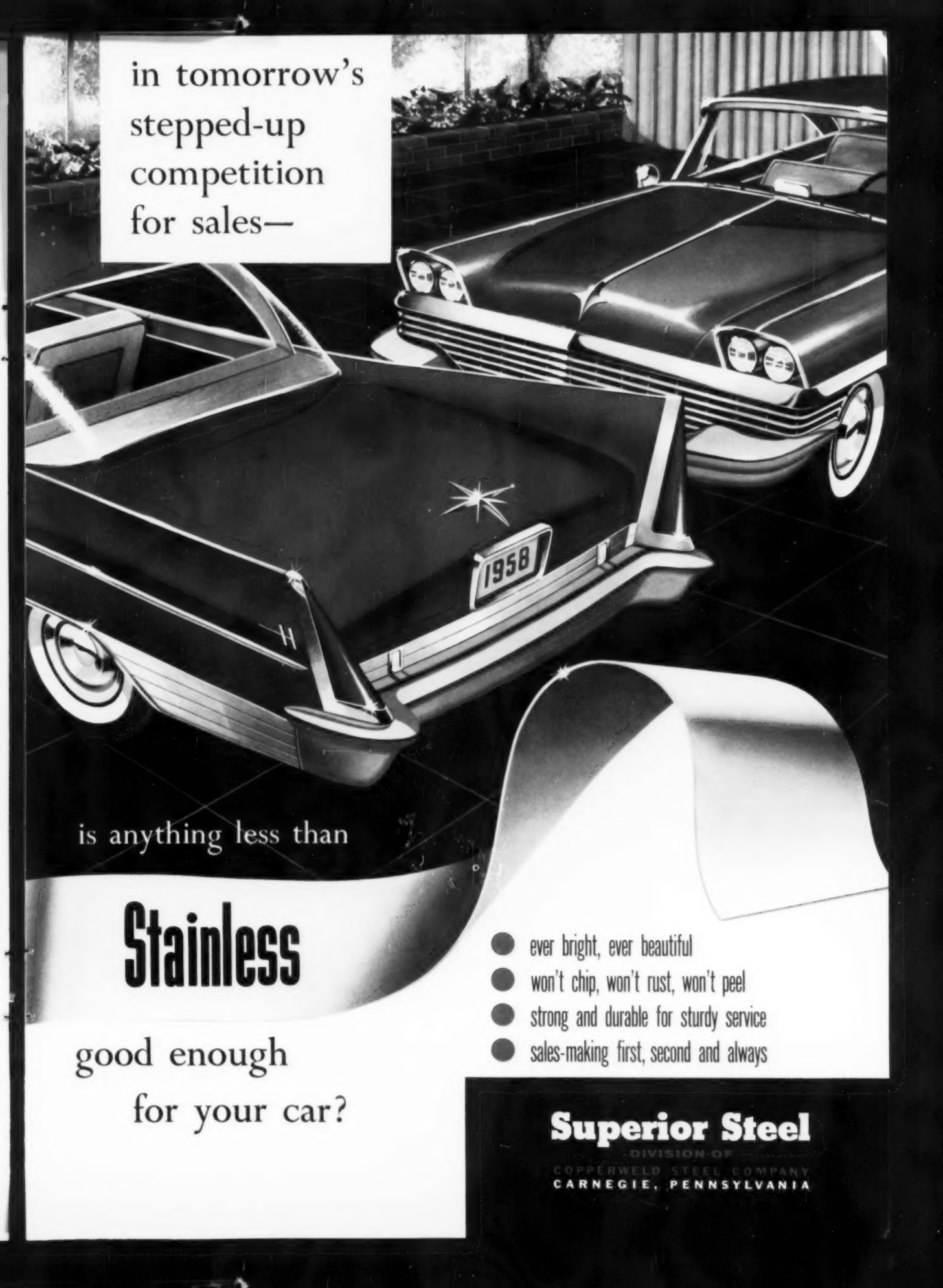
Copper and Cu Alloy Castings

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments (\$1000)	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1000)			
3661	Radios & Related Prods.	2,109	1,740	n.a.	---	636
3664	Telephone & Telegraph Equipments	218	199	797,109	\$.25	38
3669	Communication Equip., nec.	47	45	100,194	\$.45	46
3713	Truck & Bus Bodies	134	109	232,514	\$.47	212
3717	Motor Vehicles & Parts	8,118	4,759	11,000,000	\$.43	704
3721	Aircraft	381	475	6,267,147	\$.08	49
3722	Aircraft Engines	2,398	1,602	3,188,950	\$.50	63
3723	Aircraft Propellers	396	846	210,094	\$ 4.03	11
3729	Aircraft Equipment, nec.	1,789	1,437	2,342,536	\$.61	260
3731	Ship Building & Repairing	2,852	1,198	1,077,889	\$ 1.11	160
3732	Boat Building & Repairing	1,826	1,795	154,369	\$11.63	21
3741	Locomotives & Parts	1,720	1,232	428,281	\$ 2.88	17
3742	Railroad & Street Cars	3,482	1,949	495,767	\$ 3.93	52
3811	Scientific Instruments	302	376	580,916	\$.65	174
3821	Mechanical Measuring Instruments	19,054	9,839	804,257	\$12.23	221
3914	Silverware & Plated-Ware	1,118	464	211,083	\$ 2.20	84

Continued on following page

SIC Code	Industry	Consumption by Industry Shown at Left		Total Industry Shipments	Consumpt'n per \$1,000 of Total Shipments	No. Plants 20 or More Employees
		Thousands of Pounds	Value (\$1000)	(\$1000)		
1900 ¹	Ordnance & Accessories	12,476	6,505	n.a.	---	117
3423	Hand Tools, nec.	511	313	256,991	\$1.22	216
3429	Hardware	3,377	2,232	1,111,529	\$ 2.01	411
3431	Metal Plumbing, Fixtures & Fittings	36,023	14,466	443,260	\$32.64	225
3439	Heating & Cooking Apparatus, nec	3,597	2,026	1,146,608	\$ 1.77	466
3441	Structural & Ornamental Products	388	275	1,809,971	\$.15	942
3442	Metal Doors, Sash, & Trim	146	108	638,501	\$.17	336
3443	Boiler Shop Products	n.a.	534	1,133,670	\$.47	541
3444	Sheet-Metal Work	382	233	738,481	\$.32	840
3463	Metal-Stampings	654	446	1,727,544	\$.26	987
3471	Lighting Fixtures	2,282	1,318	641,569	\$ 2.05	259
3494	Bolts, Nuts, Washers & Rivets	472	259	699,523	\$.37	211
3495	Screw Machine Products	541	283	401,449	\$.71	506
3511	Steam Engines & Turbines	1,713	1,522	450,041	\$ 3.38	22
3519	Internal Combustion Engines	2,189	1,577	891,027	\$ 1.77	76
3521	Tractors	1,161	871	1,177,974	\$.74	40
3522	Farm Mchy. (except Tractors)	3,131	1,756	1,095,685	\$ 1.60	419
3531	Constr. & Mining Mchy.	6,190	3,540	1,132,333	\$ 3.13	400
3532	Oilfield Mchy. & Tools	1,860	1,235	513,383	\$ 2.41	183
3541	Machine Tools	3,832	2,747	1,146,932	\$ 2.40	262
3542	Metalworking Machinery	4,248	3,185	839,899	\$ 3.79	322
3543	Cutting Tools, Gauges, Dies, Accessories	1,480	1,375	1,408,246	\$.98	1130
3551	Food-Products Machinery	3,321	2,726	404,261	\$ 6.74	294
3553	Woodworking Machinery	398	242	167,160	\$ 1.45	192
3554	Paper-Industries Mchy.	1,823	1,244	196,635	\$ 6.33	140
3555	Printing-Trades Mchy.	763	594	248,719	\$ 2.39	81
3559	Special-Industry Mchy., nec	3,968	2,664	580,515	\$ 4.59	344
3561	Pumps & Compressors	18,429	13,057	890,873	\$14.66	308
3562	Elevators & Escalators	670	481	161,024	\$ 2.99	71
3563	Conveyors	1,618	1,012	479,224	\$ 2.11	169
3564	Blowers & Fans	450	283	261,825	\$ 1.08	100
3565	Industrial Trucks & Tractors	359	240	245,110	\$.98	67
3566	Power-Transmission Equip.	9,539	5,757	603,633	\$ 9.54	265
3569	General Industrial Mchy., nec	2,963	2,051	370,499	\$ 5.54	233
3581	Domestic Laundry Equip.	178	116	527,535	\$.22	33
3582	Laundry & Dry Clean. Mchy.	918	571	88,065	\$ 6.48	74
3585	Refrigeration Machinery	2,008	1,638	n.a.	---	215
3586	Measuring & Dispensing Pumps	1,724	847	116,543	\$ 7.27	30
3589	Service & Household Machines, nec	2,671	1,747	172,233	\$10.14	102
3591	Valves & Fittings, except Plumbers	40,610	22,858	959,012	\$23.83	211
3592	Fabricated Pipe & Fittings	2,134	1,654	225,902	\$ 7.32	138
3611	Wiring Devices & Supplies	5,294	3,764	584,366	\$ 6.44	216
3613	Electrical Measuring Instrs.	308	343	359,456	\$.95	86
3614	Motors & Generators	2,596	1,763	1,389,078	\$ 1.27	192
3615	Transformers	805	595	686,087	\$.87	90
3616	Electrical Control Apparatus	14,750	8,209	1,096,715	\$ 7.49	214
3617	Electrical Welding Apparatus	2,177	2,049	168,846	\$12.14	60
3619	Electrical Industrial Apparatus, nec	211	133	183,250	\$.73	75
3621	Electrical Appliances	115	92	795,304	\$.12	168
3641	Engine Electrical Equipment	159	144	587,124	\$.25	88
TOTAL		253,556	151,745	59,844,716		15,755

1 - The nine separate ordnance industries included in SIC are combined in the data for Industry 1900



in tomorrow's
stepped-up
competition
for sales—

is anything less than

Stainless

good enough
for your car?

- ever bright, ever beautiful
- won't chip, won't rust, won't peel
- strong and durable for sturdy service
- sales-making first, second and always

Superior Steel

DIVISION OF
COPPERWELD STEEL COMPANY
CARNEGIE, PENNSYLVANIA

Want to SAVE up to 70% of heating costs on your phosphate coating line?

new Parker *Cold Bonderite System does it!*

Turn down the heat! Put most of your Bonderite line heat costs back in the till! Parker Rust Proof Company has developed a new Bonderite system for low temperature operation.

It includes a new cold alkaline cleaner that works beautifully at 70° and is effective in a temperature range from 60° to 120°. A new Spra-Bonderite, specially formulated to produce a superior coating at low temperatures, has been developed to work in conjunction with the new Parker cold cleaner.

With the new cold Bonderite system, savings are really sizable. Heat consumption in the line is cut by as much as 70%. Cost of the new Parker system is approximately equal to conventional alkali cleaners and

phosphate coating chemicals, so the savings in heat are practically all velvet. It is estimated that on an average automobile body line the savings in steam costs can run as high as 10 to 12 cents per body; on an average refrigerator line 4 to 5 cents per cabinet. Savings in B.T.U.s can mean savings in dollars.

The new cold Bonderite system has been production-tested in mass production plants. Its performance has amazed the experts. It's ready to go to work in your plant, saving you money, right now!

Why go on paying for heat you don't need? Start using Parker's new cold Bonderite system. A letter or phone call will bring a Parker man with full, money-saving details.

*Bonderite, Bonderlube, Parco, Parco Lubrite—Reg. U.S. Pat. Off.

PARKER RUST PROOF COMPANY
2197 E. MILWAUKEE, DETROIT 11, MICHIGAN

BONDERITE
corrosion resistant
paint base

BONDERITE and BONDERLUBE
aids in cold forming
of metals

PARCO COMPOUND
rust resistant

PARCO LUBRITE
wear resistant for friction
surfaces

TROPICAL
heavy duty maintenance
paints since 1883





These three users find LIMA tops in flexibility, speed and dependability

Like hundreds of others across the nation, these three typical crane users find Limas ideal for outside materials handling. They find Limas give smooth, precise lifts, move swiftly, stay on the job year in, year out with a minimum of maintenance.

Check these Lima quality features: Moving parts flame or induction hardened for longer life; weight distributed for maximum stability; anti-friction bearings at all important bearing points; big-capacity drums and sheaves that are easy on cables; propel and swing gears and power take-off enclosed in a sealed oil bath; torque converter (optional).

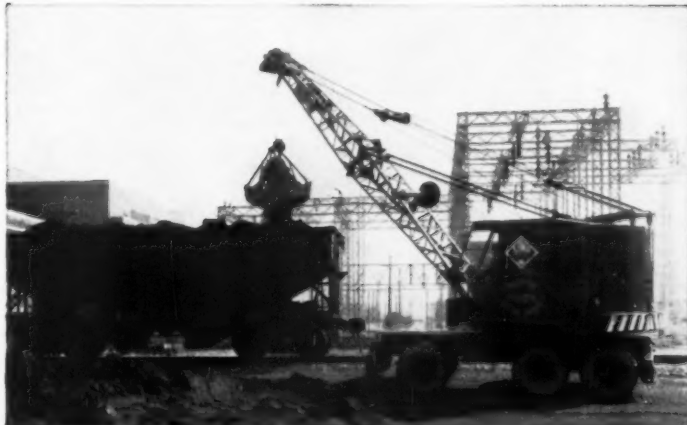
Mounted on rubber for maximum mobility, Limas are available in capacities up to 70 tons and will go anywhere a truck will go at speeds up to 25 mph. If mobility is not a factor in your operation, you can get crawler-mounted Lima cranes that will handle loads up to 110 tons. And readily interchangeable front end attachments—magnet, shovel, dragline and pullshovel—give Limas the versatility to handle any of your heavy lifting and digging jobs.

Get the complete Lima story from your nearby distributor or write Construction Equipment Division, Baldwin-Lima-Hamilton Corporation, Lima, Ohio.

DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD



Lima Type 44 Magnet Crane handling scrap in the yard of City Scrap Iron and Metal Co., Detroit. The owners say: "The purchase of this machine was based upon its outstanding capacity for long boom work with the 45-in. magnet, also upon the very economical and efficient service received from a Type 101 Lima which we bought a good many years ago . . . We consider the new Type 44 the finest machine for our type of operation that we know of."



With a quick switch from hook to clamshell on the boom, Philadelphia Electric Co.'s three Limas can handle anything from loading slag or ashes to lifting bushings from transformers during repair work. They give constant peak performance with maximum flexibility, low maintenance and high availability.



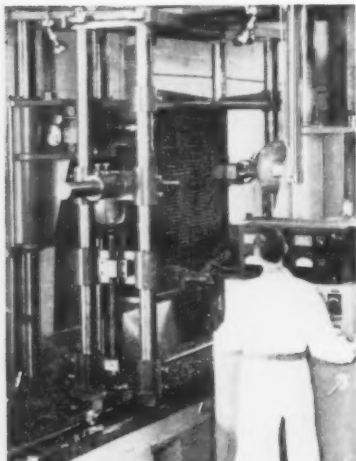
Lima Type 44 Magnet Crane, one of three Limas working for Pevin Iron & Metal Co., Detroit. Pevin says: "The metal business is based on quick handling and turnover of scrap materials. As timing is very important, we have found it most satisfactory to buy Lima machines, due to their dependability and capacity. It is our opinion, after 25 years of operation, that Lima cranes are unequalled in low maintenance and outstanding performance."



LIMA SHOVELS • CRANES • DRAGLINES • PULLSHOVELS
BALDWIN - LIMA - HAMILTON
Construction Equipment Division — LIMA WORKS
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Instrumentation • Hamilton • Loewy-Hydropress • Madsen •
Palton • Standard Steel Works

New Production Ideas

Equipment, Methods and Services

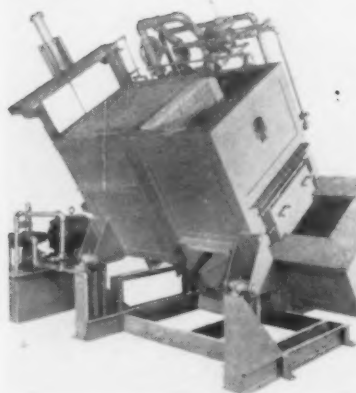


Hardened Ways Up Drilling Machine Efficiency

One of the outstanding features of this new Hill automatic opposed-spindle drilling machine is the performance of its hardened ways. The machine has a flexible, automatic system for positioning heads and table for producing hole patterns. To achieve accuracy, it employs aluminum bronze steel backed ways that travel on hardened ground steel bedways. These steel bedways are so hard (Rockwell 66 C) that the operator can walk on them with steel chips under foot and not dam-

age them. This hardness of the ways is a result of a special process; special analysis tool steel of any thickness is eternally bonded to a soft, tough, easily machinable base. This produces a way that will not bow or warp. Special hardening to the full depth of the tool steel along the entire length of the way produces its wear-resistant qualities. The hardness eliminates galling, scoring, and excessive wear. (The Ohio Knife Co.)

For more data circle No. 41 on postcard, p. 293



Tilting Furnace Nils Overheating of Metal

This nose pour furnace employs a new hydraulic tilting mechanism. Furnaces of this type are designed for use when pouring large sand castings or when molten metal is to be transferred either to a holding furnace or to a large ladle. Such furnaces are of the double-chamber, dry-hearth design. The larger sizes are usually equipped with the hydraulic tilting mechanism and can be provided with dipout vestibule in addition to a pouring spout. Four fur-

nace capacities are available, rated at 600, 750, 1000, and 2000 lb per hour. Because cold metal is never charged into the dry hearth with the new design, there is no gassing or overheating of metal. All moisture is also driven off while metal is melting on the dry hearth. It mixes with the products of combustion and leaves furnace through the flue. The result is there is no hydrogen gas. (Eclipse Fuel Engineering Co.)

For more data circle No. 42 on postcard, p. 293



Pipe End Cropper Cuts Big Pipe in Seconds

This hydraulic end cropping machine, recently installed in an automated resistance-weld steel pipe mill, cuts 12 3/4-in. OD x 3/8-in. wall steel pipe in 13 seconds. Head of the end cropper is stationary in this design application. It crops sample pipe lengths for testing to API specifications. The workpiece remains stationary during the cutoff operation, while the cutoff tools rotate. Cutting speeds and feeds are not otherwise limited by the length,

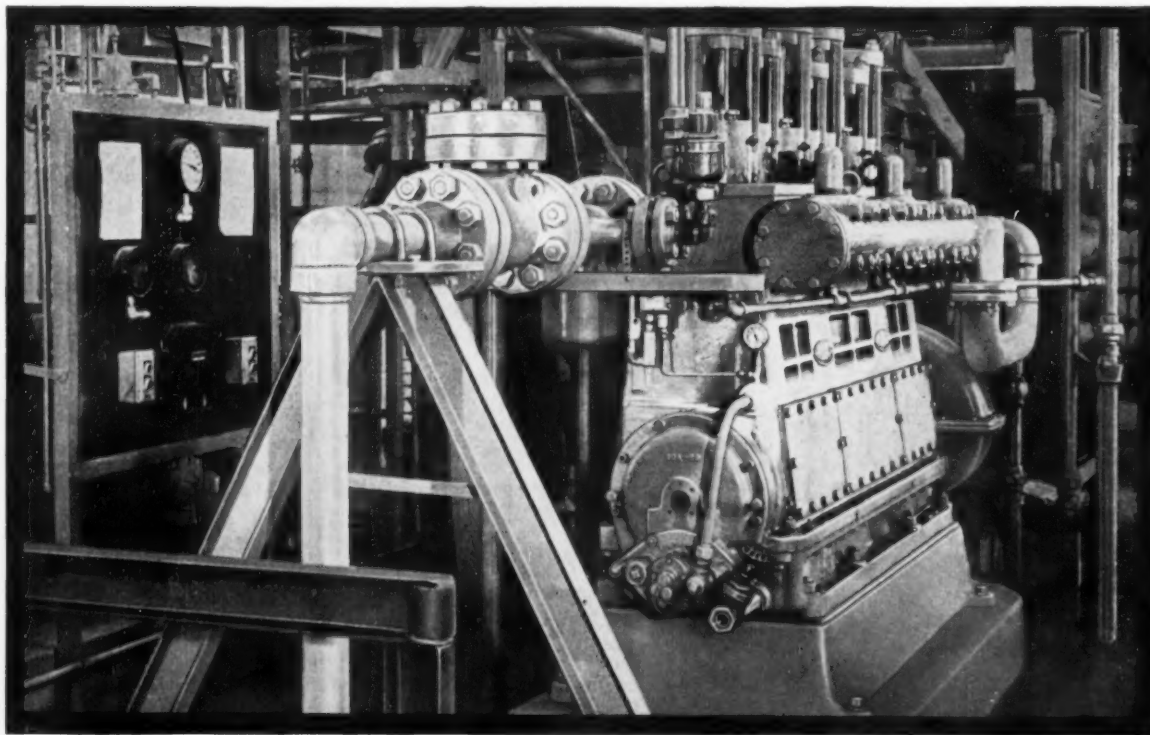
weight or straightness of a rotating pipe or tube. Tooling setup consists of three turrets holding 12 carbide-tipped cutting tools. Tool stroke is 1 1/2 in. for 1 1/4-in. wall capacity pipe. Feeds and speeds are easily adjustable for any requirement by turning a dial on a hydraulic metering valve conveniently located. A similar setup permits rapid tool traverse adjustments. (Abbey Etna Machine Co.)

For more data circle No. 43 on postcard, p. 293

MIDWESTERN DIE CASTER FINDS ANSWER:

How to pump hydraulic fluids non-stop when downtime means loss of production

During "rush seasons," when shifts work around the clock, this large midwestern manufacturer must have constant, dependable hydraulic power. One hundred percent capacity can only be maintained when the hydraulic system delivers a steady output pressure with no downtime.



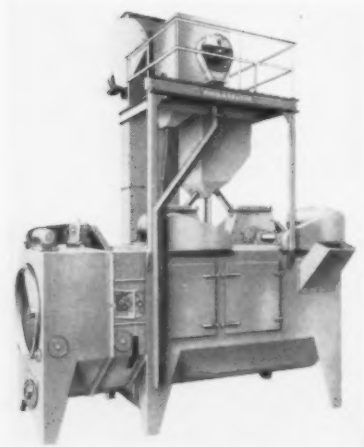
How the problem was solved: Foreseeing 24 hour days, seven days a week, the die caster turned to Aldrich. As new facilities were added, so were Aldrich Pumps. The first, a 250 gpm pump, was installed four years ago. Since then, three more 207 gpm pumps have been added. All are 2 $\frac{1}{4}$ " x 5", 1500 psi, gear driven Aldrich Septuplex Pumps, equipped with 200 hp motors.

Result: Just what you'd expect of an Aldrich Installation—steady dependability for continuous operation—highest reliability for intermittent service. Maintenance is held to a minimum. Operating efficiency has remained constantly high. Get full information on Aldrich Pumps and their advantages. Write the Aldrich Pump Company, 8 Pine St., Allentown, Pa.

the toughest pumping problems go to



NEW EQUIPMENT



Continuous Blast Cleaners Have End Discharge

This 26-in. continuous tumbling-type blast cleaner features end discharge. The machine handles a continuous flow of miscellaneous work at a high rate of production. Blast cleaning is completely automatic and continuous. Work enters the machine from one end directly into the cleaning chamber. It then passes down an inclined chute into the discharge drum and is dropped from there into a tote box or conveyor. The blast chamber is a full length, full diameter, endless apron

conveyor. It is the same type blast chamber in use on several thousands of batch type tumblasts. The size designation of the machine refers to the actual diameter of the blast chamber. Because the blast unit is located above the full diameter of the tumbling mill, the chamber is clear and unobstructed. Other sizes in the continuous tumblast line are 15, 36, 48 and 60 in. (Wheelabrator Corp.)

For more data circle No. 44 on postcard, p. 293

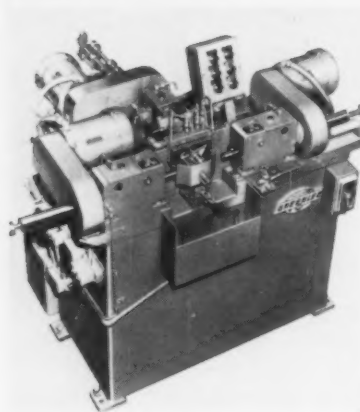


Furnace Production-sinters Powdered Parts

For high production sintering of powdered metal parts, this sintering furnace is a 75 kw continuous belt globar type unit with a 16 ft wide belt. This width provides maximum capacity since it is the most desirable to adequately soak heat into the production parts, its maker says. The application of heat is from four separately controlled zones designed for fast belt speed and consequently, high production. The first zone of 4 ft is provided to burn out the

volatiles and impurities. A second zone 6 ft in length brings the parts up in heat to the sintering temperature. This is called a soaking zone. The third zone of 6 ft, 6 in. length is the actual sintering zone. The last 4 ft section is a controlled cooling zone to prevent thermal shock when parts are at high temperatures. This furnace controls the rate of cooling for this additional 4 ft. (Haller-Inc.)

For more data circle No. 45 on postcard, p. 293

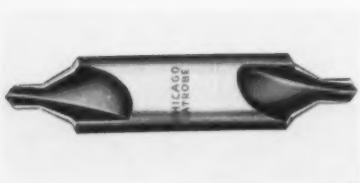


Precision Boring Unit Works Aluminum Parts

This special purpose, three-station precision boring unit machines aluminum die castings. It consists of three standard model hydro-borers mounted on a welded steel base. Two of the boring units are equipped with an air-operated, rapid-approach arrangement. This is designed to quickly advance the boring spindle to the work piece. The part is manually loaded into a stationary fixture and held in position by a quick locking device while

the three holes are being bored simultaneously. The right and left-hand units are equipped with combination boring heads. These face, counterbore, and bore the two side holes in alignment with each other. The rear unit bores and faces the internal hole in relation to the two side holes. The parts are loaded, machined, and unloaded in a cycle time of 30 seconds. (Greenlee Bros. & Co.)

For more data circle No. 46 on postcard, p. 293



Tool Drills and Countersinks in One Step

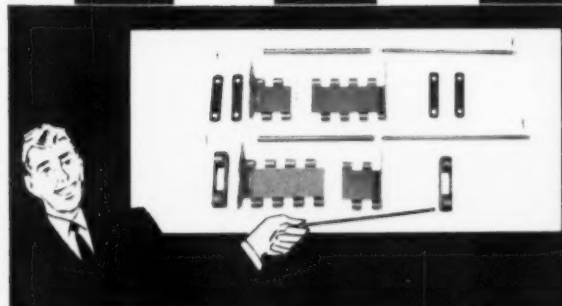
Made of high speed steel, a new combination tool drills a hole and countersinks it all in one operation. Designed with spiral flute and in both plain and bell type points, the

included angle of the plain type tools is 60°, the bell type 120°. Diameter of the drill portion equals the drill length. (Chicago-Latrobe.)

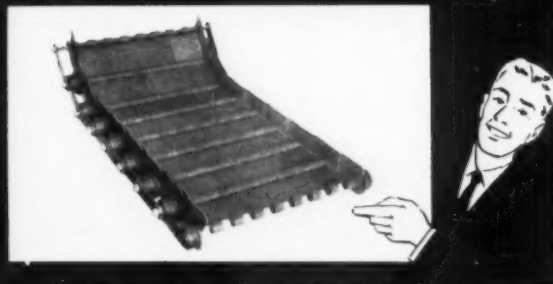
For more data circle No. 47 on postcard, p. 293

HERE'S A STEEL HIGHWAY

for your scrap traffic!



May-Fran Hinged-Steel Belting is assembled from mass-produced components to form a materials handling belting of almost any width, length or contour to meet



individual specifications. Links are joined by means of steel rods . . . links, wings and side chain become integral unit.

CHECK THESE FEATURES

- ✓ Handles heavy, hot and rough materials
- ✓ Engineered for the ultimate in working life
- ✓ Constructed for maintenance-free operation



Complete details including specifications and engineering drawings are available in Catalog MF-600. Send today!

Belting can be assembled in a wide range of lengths, widths and contours . . . to facilitate the handling of metal scrap, hot forgings, stampings, flash, wet or dry chips as well as other sharp or rough materials.

May-Fran hinged-steel belting gives production savings through scrap handling efficiency

Precision formed steel links are assembled in horizontal rows and joined by high-carbon steel tubes and connecting rods. These rods are fastened to side chains to support the belt links so they "float" freely, and side chain takes all tension. Wings remain positively engaged and in continuous overlap at all times, even over sprockets.

MAY-FRAN

ENGINEERING, INCORPORATED

MAY-FRAN ENGINEERING, INC.
1698 Clarkstone Rd., Cleveland 12, Ohio
Please send me (free) MF-600

7550-MF

NAME _____
TITLE _____
COMPANY _____
CITY _____ ZONE _____ STATE _____

NEW EQUIPMENT

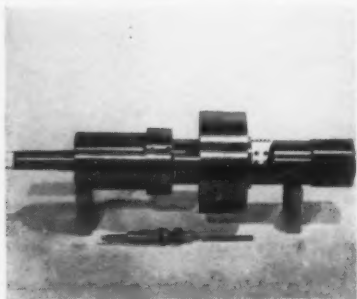
Spiral Flute Reamer

A standard length solid carbide chucking reamer (with steel shank) features right hand spiral flutes. Some 17 such tools are available. These range in diameter from $\frac{1}{8}$ to $\frac{3}{4}$ in., overall length from $3\frac{1}{2}$ to $9\frac{1}{2}$ in. There are four flutes in fractional sizes $\frac{1}{8}$ through $\frac{1}{4}$ in.; six flutes on reamers from $9/32$ through $\frac{3}{4}$ in. Features of this spiral fluted reamer include its straight shank for full chucking, brazed solid carbide cutting tip, radius chamfer and right hand cutting. (The Atrax Co.)

For more data circle No. 48 on postcard, p. 293

Nucleonic Tools

A new tooling development is for machining the breech block mechanism in atomic reactors. The complete tooling consists of a recessing tool, which machines the internal annular grooves and a milling attachment, which mills the longitudinal slots to receive the male breech



mechanism. Both tools are designed for use in radial drills, boring mills, milling machines, etc. Although these tools were designed primarily for use in manufacturing atomic reactors, they may be applied to any large workpiece, requiring internal forming and milling operations with a resultant drastic reduction in cost per unit. (Maxwell Industries, Inc.)

For more data circle No. 49 on postcard, p. 293

Aluminum-Steel

A new material, steel protected with a special aluminum coating, withstands corrosion, under normal

industrial conditions, over three times longer than other materials. Aluminized steel integrated with cable support systems provides greater performance results for the systems, the producer reports. Heavier loads consisting of power cables, control cables, process tubing, and piping can be supported efficiently and economically. The high cost of painting and repainting support systems is almost eliminated with the new material. (Chalfant Products Co., Inc.)

For more data circle No. 50 on postcard, p. 293

Case Segregator

Instead of requiring separate single lines of conveyors for each size of case handled, a new case goods segregator permits the user to run all his case sizes on a single conveyor. As each case from the single conveyor line enters the segregator, mechanical "fingers" measure the case height and length. Then it sends the case either straight ahead on the original conveyor or cause it to be transferred to parallel conveyors either to the right or left. If required, each of these parallel conveyors can be equipped with a segregator and so on, so that any number of different case sizes can be sorted onto separate conveyors. (Food Machinery & Chemical Corp.)

For more data circle No. 51 on postcard, p. 293

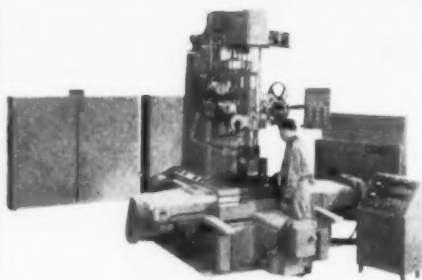
Chemical Blanket

A chemical blanket has been developed for use on hot phosphate coating baths. The blanket acts as a barrier to prevent escape of steam and fumes. Heat savings up to 70 pct have been reported in actual field use. Since the bath is sealed, there is little escape of fumes and vapors. (American Chemical Paint Co.)

For more data circle No. 52 on postcard, p. 293

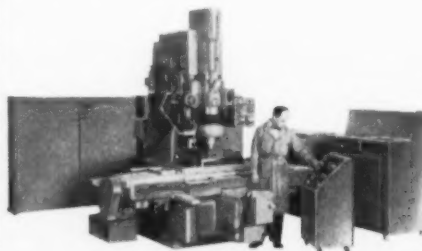
Metallic Firefighter

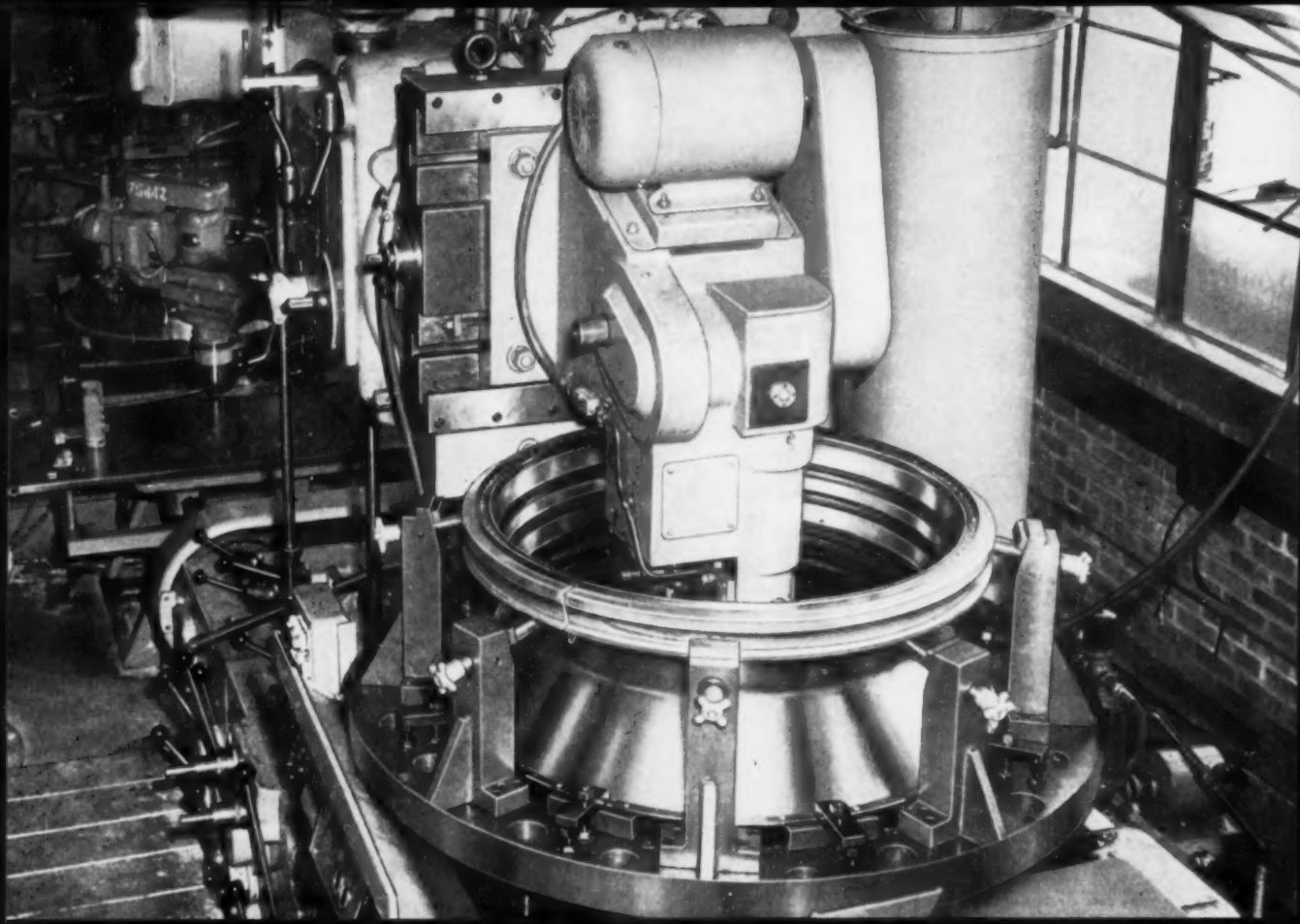
For extinguishing metallic fires, a new product is particularly helpful against zirconium, hafnium, lithium and uranium. It is equally ef-



OTHER P&W NUMERICALLY CONTROLLED MACHINE TOOLS

... include the Electrolimit Jig Borer and the Vertical Precision Hole Grinder.





NO MISTAKES with NUMERICAL CONTROL ... and Machine Time Cut 46%!

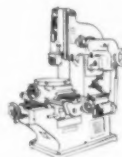
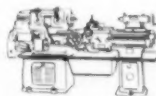
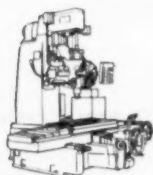
These were the results when a Pratt & Whitney Numerically Controlled Rotary Table was put to work by Lycoming Division of AVCO Manufacturing Corporation. This job involves milling 236 slots accurately located on three rings within jet engine cases. Directed by a punched tape, the new table automatically indexes the work for each cut. Indexing is accurate to 5 seconds of arc. In addition, the table's numerical control system governs the milling feed motions... putting the entire operation on an automatic cycle.

Replacing a hand-indexing rotary table, the P&W Numerically Controlled Rotary Table has cut machining time 46%! Equally important, P&W

Numerical Control eliminates operator error in locating the 236 slots... which would turn a nearly completed workpiece into scrap.

Lycoming's experience is no isolated example. Applied to P&W Rotary Tables, Jig Borers and other machines, Pratt & Whitney Numerical Control is producing equally spectacular time-and-money savings in many other plants. It may well offer opportunities for greater profits in your plant.

Write now for complete information. Pratt & Whitney Company, Incorporated, 10 Charter Oak Boulevard, West Hartford, Connecticut.



JIG BORERS . . . ROTARY TABLES . . . KELLER MACHINES . . . LATHES . . . VERTICAL SHAPERS . . . CUTTER AND RADIUS GRINDERS



PRATT & WHITNEY

FIRST CHOICE FOR ACCURACY

MACHINE TOOLS • GAGES • CUTTING TOOLS

NEW EQUIPMENT

fective against magnesium, calcium, sodium and potassium, which are easily combustible under known conditions. The material is shoveled or poured directly on burning parts, ingots or scrap piles. It may be used as a packing material to prevent such fires. Or it can even be added to zirconium scrap piles to prevent spontaneous combustion. (Mercantile Metals, Inc.)

For more data circle No. 53 on postcard, p. 293

Waterless Cleaner

A new waterless hand cleaner complies with Armed Forces standards. The cleaner derives its cleansing action from a water soluble synthetic wetting agent. It contains no petroleum solvents, abrasives, scrubbers or any component which is not soluble in water. The material comes in cream form, in standard 1-lb jars or in 80-oz units for use with wall dispensers. (Milburn Co.)

For more data circle No. 54 on postcard, p. 293

Mist Coolant

The main purpose for using this mist coolant unit is to keep cutting tool cool during operation, to increase the cutting life and speed up production. Adaptable to drill



presses, lathes, grinders, saws, abrasive belts, milling machines and almost any other type of machine that requires coolant, the unit reduces friction and heat on your specific job, by keeping tools cool. It ap-

plies coolant in combination with air; coolant actually dissipates in the air. Thus a coolant pan is unnecessary. The unit comes in one up to 3½ gal containers. It operates with as many nozzles as required up to four. (Wesco Tool and Mfg. Co.)

For more data circle No. 55 on postcard, p. 293

Floor Patch

A new floor patching material is for use in all types of industrial plants. The only normal preparation required to apply the patch is to wire brush where necessary to remove loose particles from the surface. No deep chipping out or cutting around the edge of the area



to be patched is required. The material comes completely packaged as an all-in-one unit in a 2½-gal sealed container. This contains the aggregate in a plastic bag and three cans which include the catalyst, a binder and a smoothing agent. It's only necessary to mix the binder and catalyst in the large container, add the aggregate, and the patching material is ready to apply. It can be applied as thin as 1/8 in. (The Garland Co.)

For more data circle No. 56 on postcard, p. 293

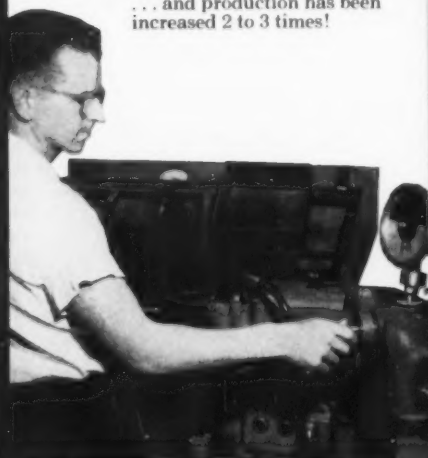
Lifting Magnet

A new 61-in. diam lifting magnet features all-cast-steel construction. Designed especially for scrap industry use, the magnet can adapt to just about any operation in which turnings, borings, small thin gauge punchings or other scrap of a similar nature must be handled. Its maker claims the following advan-

OTHER P&W GAGE APPLICATIONS AT CUMMINS:



SIMULTANEOUSLY CHECKING 8 CRITICAL DIMENSIONS . . . of cylinder liners, this P&W Sigmatic Multi-Dimension Gaging Machine lets 1 man handle inspections formerly requiring 2 men . . . and production has been increased 2 to 3 times!



TEN-THOUSANDTHS PRECISION AT THE MACHINE . . . puts accuracy to work where it counts — right on the Cummins production line. Checking precision injector cups with this conveniently located P&W Air-O-Limit Comparator, the machine operator can be sure at a glance that his work is within tolerance.



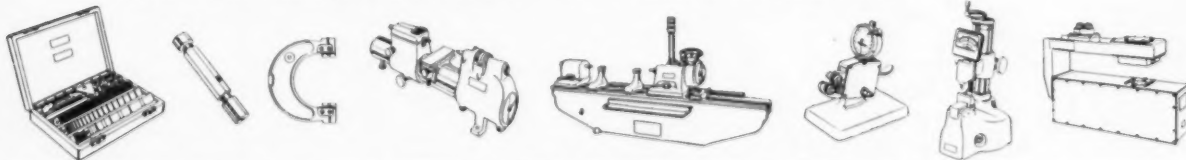
CUMMINS CUTS INSPECTION TIME 33%...

... and Pratt & Whitney Gages can bring you similar savings! One of the world's largest manufacturers of high-speed diesels the Cummins Engine Company believes that finer precision is a matter of increased production and greater profits. Gaging the depth of cylinder liner counterbores in cylinder blocks, Cummins was using a mechanical depth gage ... checking at 2 points in each bore. To improve speed and precision on this vital inspection, Cummins switched to a P&W 3-Station Air-O-Limit Comparator. Inserted into the bore, the gage head checks depth at 3 points simultaneously ... and a twist of the wrist provides readings around the entire circumference. Gaging time has been cut 33% with inspection costs correspondingly reduced. More

accurate readings are obtained. And the full 360° inspection provides an extra assurance of product precision.

Because precision is important at Cummins, there are dozens of P&W Gages of every type in this plant. As their gage foreman states, "We like their accuracy and dependability — and the excellent service provided by the Pratt & Whitney Company."

You too can put greater precision to work to cut costs and increase production. Write now for more complete information on Pratt & Whitney Gages. Pratt & Whitney Company Inc., 10 Charter Oak Blvd., West Hartford, Conn.



GAGE BLOCKS ... CONVENTIONAL GAGES ... SUPERMICROMETERS ... STANDARD MEASURING MACHINES ... COMPARATORS ... AUTOMATION AND CONTINUOUS GAGES



PRATT & WHITNEY

FIRST CHOICE FOR ACCURACY

MACHINE TOOLS • GAGES • CUTTING TOOLS

NEW EQUIPMENT

tages for it: low maintenance; one-piece construction; outer pole shoe, inner pole shoe and top case are all embodied in a single steel casting; light weight (6750 lb). It's wound with strip aluminum. Operating current is 56 amp. (The Ohio Electric Mfg. Co.)

For more data circle No. 51 on postcard, p. 293

Magnet Drill Press

Small and compact, this portable electro-magnetic drill press weighs just 20 lb. Standing only 9¼ in. high, the unit performs jobs in close quarters and hard-to-reach locations often inaccessible to larger portable



drill presses. Particularly adaptable for use on tool set-up work, dies, jigs and fixtures, special machinery, plumbing and electrical jobs, maintenance and repair work, it drills up to 3/8-in. holes. It taps up to 5/16-in. holes. (Portomag, Inc.)

For more data circle No. 52 on postcard, p. 293

Impact Wrench

Compact and light weight is this powerful ½-in.-drive air impact wrench. It features a simplified impact mechanism with only four moving parts. The tool employs no springs or gears. Unitized construction allows for easy inspection removal. It also features a needle bearing design for impact spindle rotation, providing long service, little maintenance need. Weighing 6¾ lb, it's only 6 9/16 in. long. However,

the combination of an extra-large air motor with 6000-rpm free speed and a compact impact mechanism make the tool hard hitting and fast driving, with short work cycles. So states its maker. Designed to take up to ¾-in.



bolts, it employs a ½-in. sq drive, pistol-grip handle with convenient push-button reversing switch for one-hand operation, built-in numbered power regulator, and built-in oiler. (Thor Power Tool Co.)

For more data circle No. 53 on postcard, p. 293

Tractor-Loader

Featuring four-wheel drive, rear-wheel steer is this tractor-loader in the 1¾ cu yd class. Its outstanding operational and safety features include rigid lift-arms pivoted forward of the operator's seat, very good stability, power shift and steer, Torq-matic drive, speeds to 21 mph in



both forward and reverse, with controls and color-coded instruments designed for easier, faster operation. Overall length of the unit is 18 ft 5 in. with bucket at carry. Weight is 15,600 lb. It is powered by a 251 cu in. engine, has 11,000 lb breakout force at ground level, and 5500 lb lift capacity. (J. I. Case Co.)

For more data circle No. 54 on postcard, p. 293

Let me show you*



*James C. Browning,
P&J Representative
in the Ohio area.

*how changing to
a P&J Automatic
helped
DeVilbiss . . .*

JOB FACTS:

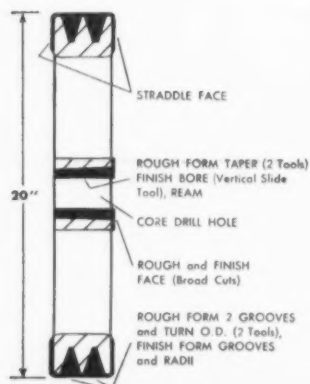
PART: Air Compressor Flywheel

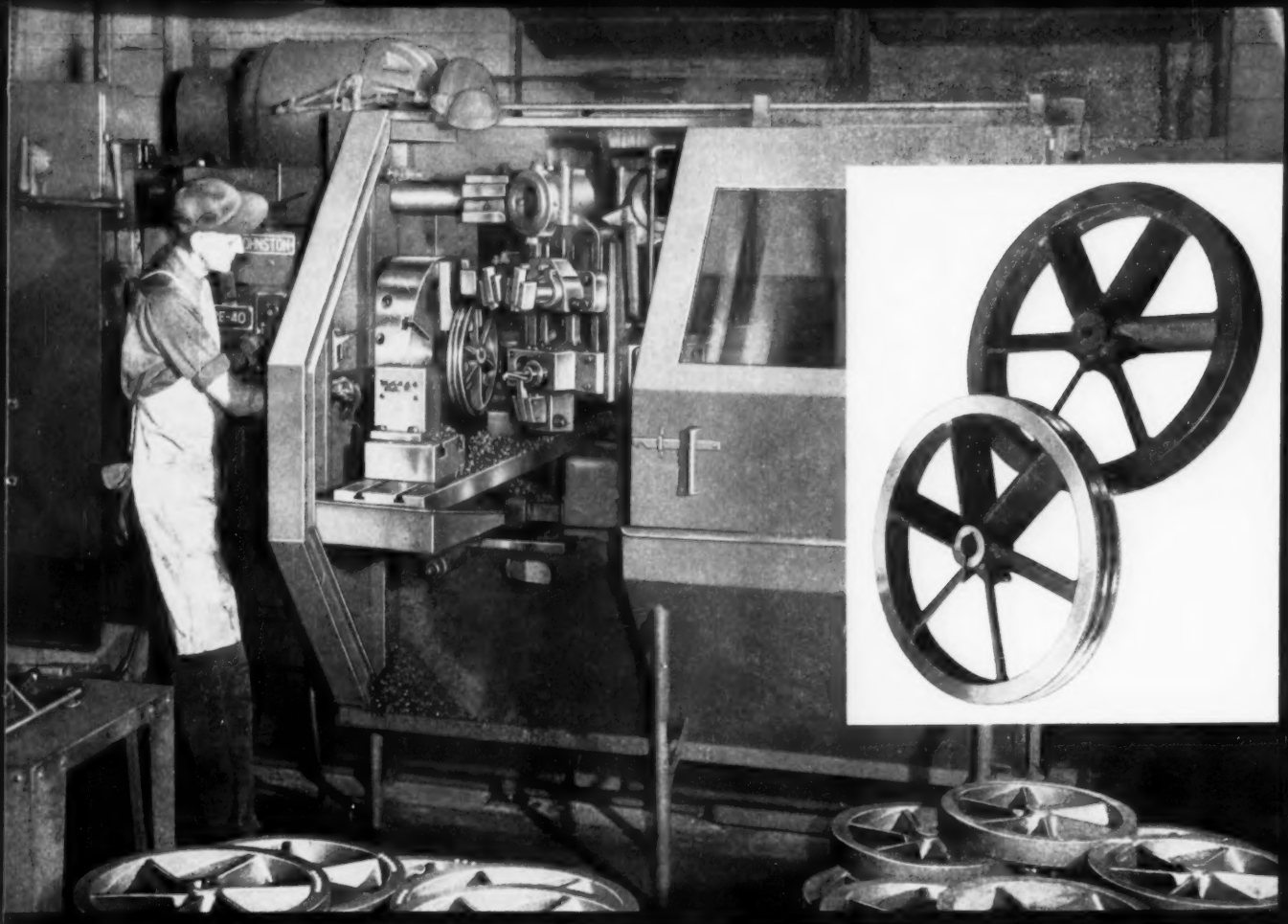
MATERIAL: Cast Iron

REQUIRED: 5 turning, boring, facing, grooving and reaming operations

THE MACHINE: A P&J 6DRE-40 Automatic Turret Lathe

THE RESULTS: 22 pieces completed every 4-hour shift . . . with the operator also handling 2 other secondary operations



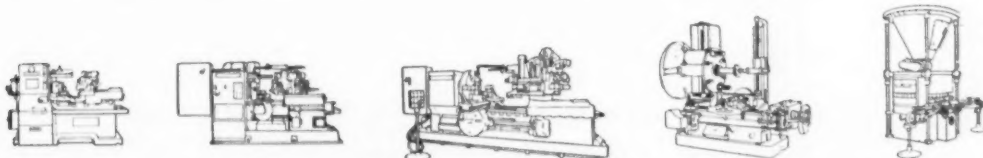


... . **SAVE 66% IN LABOR COSTS** through **"JOB INTEGRATION"**

The Potter & Johnston 6DRE-40 Automatic Turret Lathe recently installed at the Toledo, Ohio plant of the DeVilbiss Company machines large, high-precision flywheels — handling 5 complex cuts on a fully automatic basis. Previously, using a hand-type lathe, this same job required 5 separate hand operations and the operator's full-time attention. Now, with the P&J Automatic on the job, the operator also handles two secondary operations . . . keyway broaching and balancing . . . that formerly required 2 additional operators working in separate departments. As a result of this new "job integration," labor costs have been reduced 66% with 2 men released for other work, overall

time for flywheel production has been reduced 20 to 30%, and costly time-wasting intra-plant handling has been eliminated.

If your manufacturing operations demand high-speed, economical production of precision parts, a switch to P&J Automatics can help reduce machining time and costs . . . and may also make it possible to streamline a whole series of related operations. Act today. Let us send the P&J Representative in your area to analyze your requirements and recommend a production plan to meet your needs. Write direct to Potter & Johnston Company, Pawtucket, Rhode Island.



AUTOMATIC TURRET LATHES . . . GEAR CUTTERS . . . PACKAGING MACHINES



POTTER & JOHNSTON

SUBSIDIARY OF PRATT & WHITNEY COMPANY, INC.

PRECISION PRODUCTION TOOLING SINCE 1898



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Since 1882, Williams Diamond "W" mark on forgings has meant the best in design, engineering and forging to a high degree of accuracy.

At Williams, there is adequate equipment for complex or simple jobs in short or long runs. Also complete heat treat laboratory and inspection facilities. In addition, forgings can be milled, drilled, turned and broached . . . and there are complete die sinking facilities. Whether your requirements are carbon, alloy or stainless steel, aluminum, brass, bronze, titanium or monel. Williams can forge them in most shapes and in weights up to 250 lbs.

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This new brochure tells a detailed story of Forgings by Williams which offer advantages that can't be duplicated. Write for your copy today.



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FREE TECHNICAL LITERATURE

New Catalogues And Bulletins

Money-saving products and services are described in the literature briefed here. For your copy just circle the number on the free postcard, p. 293.

Motor Reducers

Catalogs now available describe new right angle drive motor reducers from 1/3 to 30 hp. Output speeds of these reducers are 11.5 to 310 rpm. They come in 13 sizes. (D. O. James Gear Mfg. Co.)

For free copy circle No. 1 on postcard, p. 293

Induction Melting

Induction melting equipment is featured in a data bulletin. It tells about how certain ground detectors give protection without production delays when used with high frequency induction melting equipment. (Inductotherm Corp.)

For free copy circle No. 2 on postcard, p. 293

New Equipment

Shop and shop office equipment is listed in a new equipment manual. It contains brief descriptions and ordering data on metal shelving, safes, chairs, ladders and many other items. (Precision Equipment Co.)

For free copy circle No. 3 on postcard, p. 293

Silicone Compounds

Uses and properties of one maker's silicone compounds appear in an 8-page data folder. These compounds are organo-silicone polymers with high lubricating and solubility properties. The folder suggests many

possible uses for the materials, including special machine or metal lubricants, defoaming agents, etc. (Silicones Div., Union Carbide Corp.)

For free copy circle No. 4 on postcard, p. 293

Thermocouple Cable

Thermocouple extension wire now is available in multipair cables with over-all polyvinyl plastic sheath, a new bulletin announces. The literature states that when four or more pairs of wires are needed, this cable greatly reduces the cost of installation compared to pulling individual pairs through conduit. (Claud S. Gordon Co.)

For free copy circle No. 5 on postcard, p. 293

Freezer

A new low-temperature freezer (-225°F) is described in a firm's literature. It comes in one to 100 cu ft sizes. The low temperature is achieved mechanically. (Webber Engineering Corp.)

For free copy circle No. 6 on postcard, p. 293

Silicone Products

More than 150 commercially available silicone products are run-down in a 16-page reference guide just off the press. This comprehensive 1958 edition of an annual release also tells how silicones can cut costs, simplify design problems. (Dow Corning Corp.)

For free copy circle No. 7 on postcard, p. 293

Heat Treating

In its dozen pages a folder describes new protected-quench heat-treating furnace equipment. Specifi-

cally, it points out the excellent controls used with the equipment. (Leeds & Northrup Co.)

For free copy circle No. 8 on postcard, p. 293

Melting Furnace

How a new 60-cycle coreless furnace induction melts ferrous and nonferrous metals is told in a 4-page brochure. It offers characteristics, advantages and operations of this Ajax-Junker furnace. (Ajax Engineering Corp.)

For free copy circle No. 9 on postcard, p. 293

Zirconium

Commercial-grade zirconium metal is the subject of a booklet. Used in nuclear reactors as cladding, reactor-grade zirconium has low neutron absorption and corrosion resistance properties. Commercial-grade zirconium has the same corrosion properties and is available at lower price, in quantity. (Columbia-National Corp.)

For free copy circle No. 10 on postcard, p. 293

Clutch

Electro-magnetic disc clutches shown in a new bulletin are for use on ball mills, rod mills, compeb mills, and kilns. Of heavy-duty construction, they are light, compact, with 120-000-ft lb maximum torque. They offer 4878 sq in. of lining area. (Stearns Electric Corp.)

For free copy circle No. 11 on postcard, p. 293

Chemical Firm

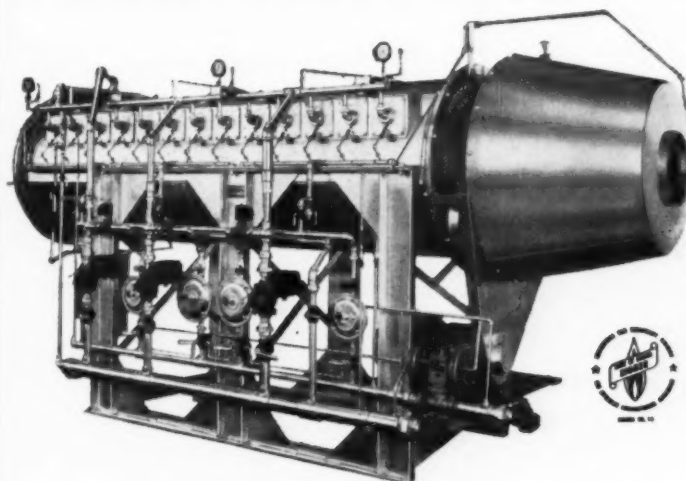
Potentials of a well-known chemical company are looked into in a 12-page booklet. It tells how the firm grew from a research group of three persons in 1948 and 1949 to 1200 the following year. And it gives a glimpse of a pair of new multi-million-dollar plants going up, in addition to impressive facilities already working. (Callery Chemical Co.)

For free copy circle No. 12 on postcard, p. 293

Analyzer

Analysis of 61 different elements is possible with a new sensitive, versatile instrument, according to a 4-

"PART OF AUTOMATION" AUTOMATIC HEAT TREATING



Up to 1000 lbs. of BOLTS per hour . . .

Bolts, screws, precision machine parts, nuts, rings, pins and anything requiring heat treating in a positively controlled atmosphere can be automatically hardened and tempered in the—

AGF ROTARY RETORT Heat Treating Furnace

- MAINTENANCE cost is negligible.
- 50 YEARS OF PROVEN SERVICE.
- ABSOLUTELY SAFE. No operator danger.
- EASY TO OPERATE. "Push Button" control.
- COMPLETELY OUTDATES other methods.
- CLEAN HARDENS without mess and dirt.
- DEPENDABLY UNIFORM HARDENING.
- COMES IN SEVERAL SIZES of furnaces.
- FACTORY TRAINED REPRESENTATIVES in principal industrial areas.

AGF Rotary Retort Heat Treating and Tempering Furnaces are used by most of the large and small producers of precision metal products because AGF originated the rotary furnace that constantly rotates the work and prevents "contact spots".

In operation the work is fed into a hopper that mechanically controls the feed to the spiral. This spiral carries the work through the retort and into the quench, completely sealed from outside air.

It's the positive way to accomplish perfect hardening—automatically.

Ask AGF Metallurgists and Engineers for a recommendation. There's no obligation.



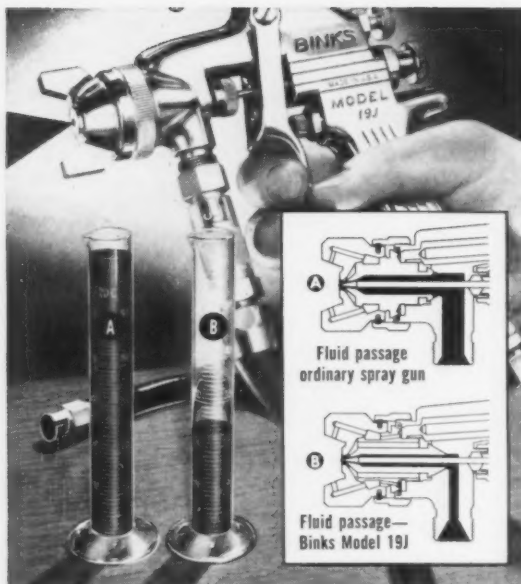
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Inventors,
Designers and
Builders of
Industrial Heat
Treating and Gas
Tempering
Equipment since
1878".

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Please send us your latest literature illustrating and describing AGF Rotary Furnaces. Our application will be . . .

Company Name
Address
Individual
Title



New Binks spray gun for circulating systems Cuts clean-out costs 65% when changing colors

Plants using multiple-color paint circulating systems frequently shift spray guns from one color line to another. To clean the old color out of the spray gun the new color must be run through the gun (and quick detachable hose connection) until there is no danger of inter-mix. Paint lost through this "bleeding" operation runs between 7 and 10 fluid ounces.

New spray gun cuts "bleed" losses almost 65%. Binks Model 19J spray gun, when used with the same quick detachable hose connection, slashes "bleed-off" losses. Only 2 to 4 fluid ounces must be passed through the passages to make certain there is no inter-mix to cause a finish reject.

Unique design features. Binks Model 19J is an efficient, dependable production spray gun in every respect. Its paint saving characteristics are achieved through two unique in-

ternal design features. Design feature number one greatly reduces the amount of paint contained between material inlet and nozzle orifice over that contained in conventional spray guns. Feature number two eliminates all "pockets" in the gun head which can trap paint. This also contributes to faster cleanout with less waste.

Automatic model available. Binks Model 21J is an automatic spray gun, triggered by air pressure. On automatic painting machines it provides the same paint saving economies as the Model 19J.

All the facts in Bulletin RFG. Get the complete story on these two new Binks spray guns. Ask your Binks industrial distributor for a copy or write direct to the address below.

65% savings in paint!

- A** To clean-out a conventional spray gun after transferring to another paint line, 7 to 10 ounces of paint must be "bled" to prevent a color inter-mix.
- B** Only 2 to 4 ounces of "bleed-out" paint are required to clean-out the new Binks Model 19J spray gun — a 65% material savings.

Ask about our spray painting school
Open to all...NO TUITION...covers all phases.

7736

Binks
EVERYTHING FOR
SPRAY PAINTING



Binks Manufacturing Company
3124-30 Carroll Ave. West, Chicago 12, Ill.

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FREE LITERATURE

page product bulletin. It says the unit uses "one of the most rapid general methods of qualitative methods yet developed." (Fisher Scientific Co.)

For free copy circle No. 13 on postcard, p. 293

Transmission Belts

Transmission belts for speeds to 100,000 rpm and up are described in a 6-page bulletin. (Russel Mfg. Co.)

For free copy circle No. 14 on postcard, p. 293

Machine Tool

A 28-page catalog details a new portable precision machining tool. It includes information on how to use the basic unit and seven attachments for milling, boring, shaping, slotting, grinding, drilling and dozens of other related operations. (The Dumore Co.)

For free copy circle No. 15 on postcard, p. 293

Resolver

A data-sheet describes a new high accuracy size 15 resolver. This unit features tuned impedance of 10,000 ohms, permitting operation over a wide voltage range. (Norden-Ketay Corp.)

For free copy circle No. 16 on postcard, p. 293

Heating Units

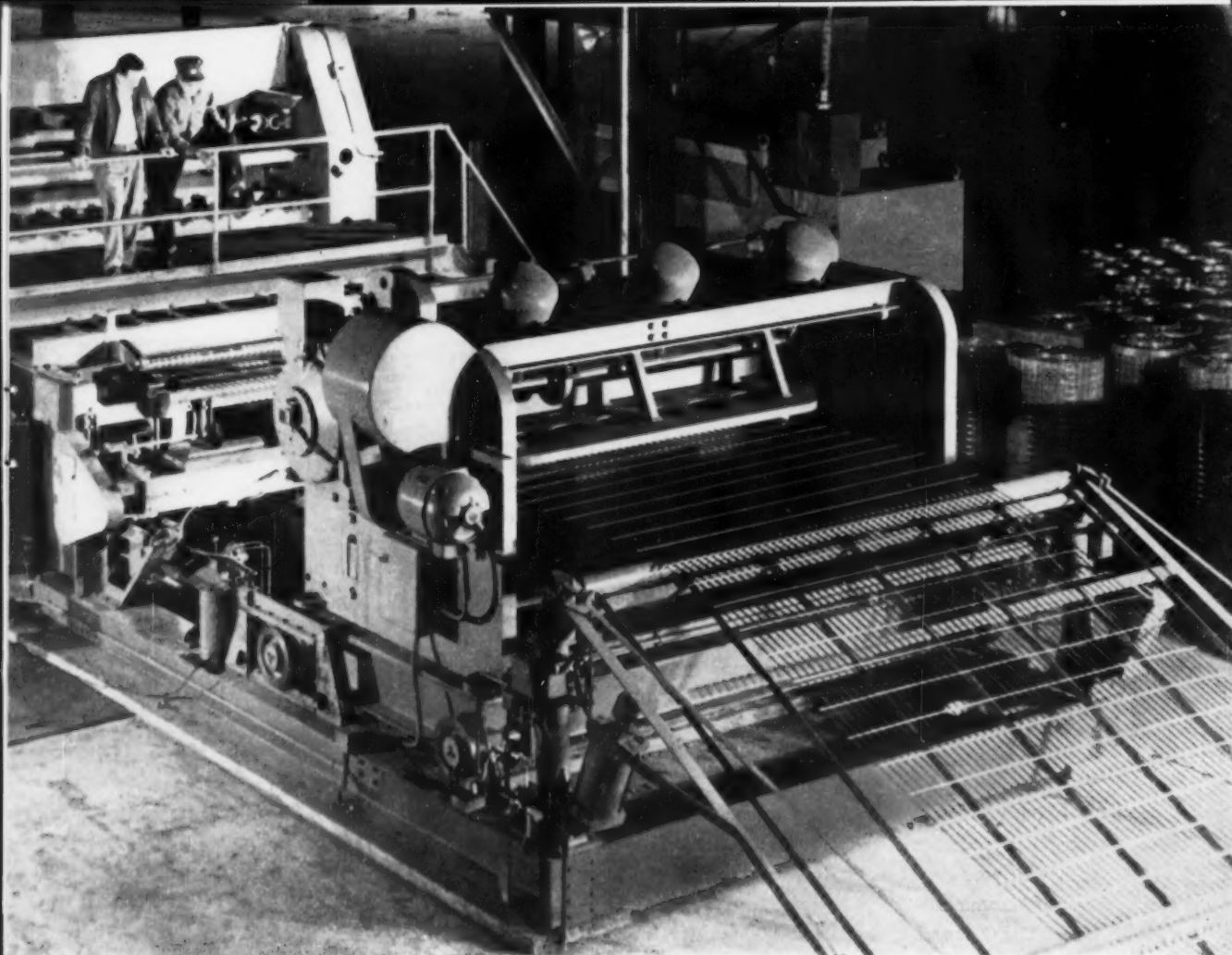
Gas-fired overhead heating units are described in a "photo album." The 16-page booklet contains photographs of heaters installed in a wide variety of commercial and industrial plants. (Thermobloc Div., Prat-Daniel Corp.)

For free copy circle No. 17 on postcard, p. 293

Valves

Bronze and iron body valves are outlined in a booklet. The 136-page catalog includes helpful technical data for the initial design of piping layouts. (The Fairbanks Co.)

For free copy circle No. 18 on postcard, p. 293



Cincinnati Shear cuts wire mesh at Pittsburgh Steel

The Cincinnati Shear shown is part of an automatic wire welding machine at Pittsburgh Steel Company, Monessen, Pennsylvania. The machine produces wire mesh and fabric used for concrete pipe, buildings, and other applications. The photograph shows the shear cutting forty-seven 2/0 gauge (.331") wires per stroke. The wire is low carbon, cold drawn steel. Other jobs require shearing mesh with wires up to 1/2" diameter.

This shear was specially engineered for this type of application. Because cuts are heavy and production is continuous, Cincinnati dependability is essential.

Standard Cincinnati Shears offer such productive features as powerful hydraulic hold-downs, all-steel interlocked construction, and one-clearance shearing of different metal thicknesses.

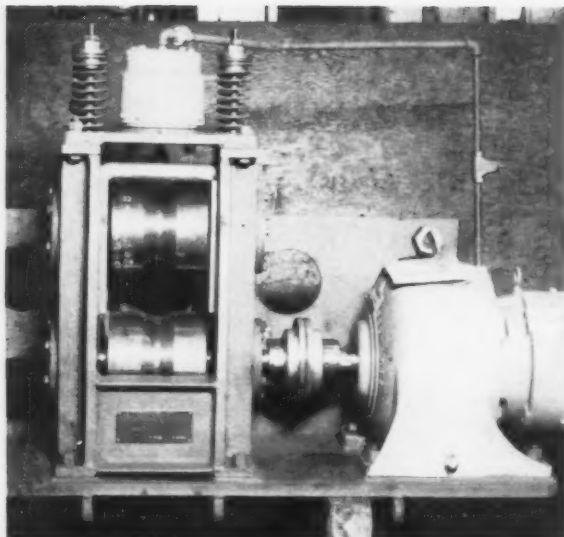
Write Department B for Shear Catalog S-7R.

Shapers / Shears / Press Brakes

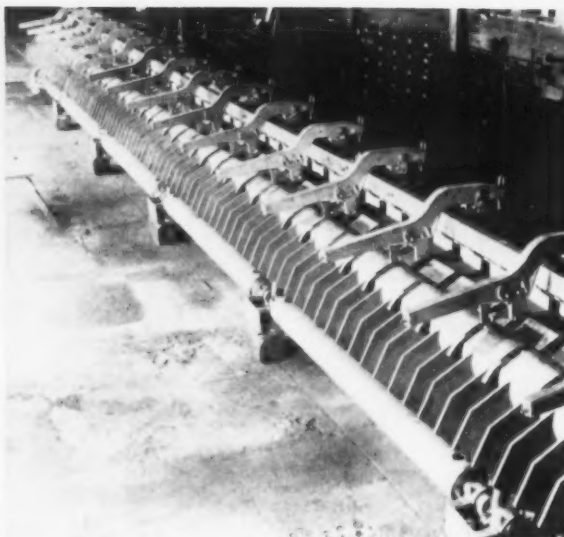
THE **CINCINNATI**
SHAPER co.



Cincinnati 11, Ohio



Pinch Roll Unit for 14" Mill



Cooling Bed Runin Table with Overhead Packing Mechanism

in **BIRDSBORO** mill machinery—the only standard is what's best for your operation

That's why we say that only *special* mill machinery is turned out of our shops. Each piece of equipment is custom-designed. Each step of its manufacture is taken with your needs in mind. And more than 50 years of "customized" service to industry has given BIRDSBORO important know-how with nearly every type of mill machinery made today . . . as well as with the new equipment that automation and higher production quotas will demand. Your Birdsboro repre-

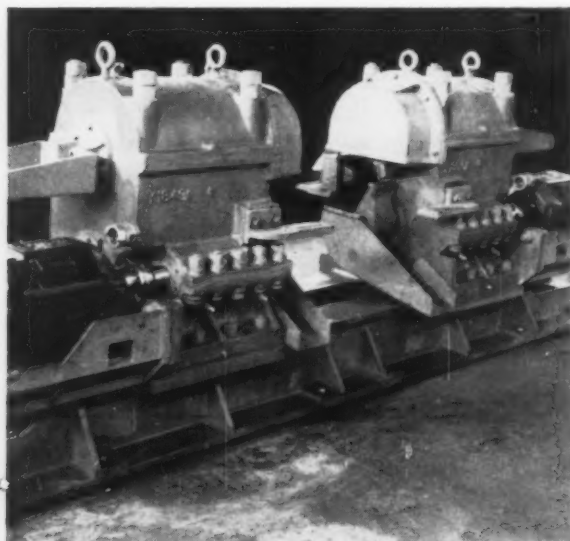
sentative will be happy to discuss past accomplishments and future possibilities, and how they can help you.

Main Office, Engineering Department and Plant:
Birdsboro, Pa., *District Office:* Pittsburgh, Pa.

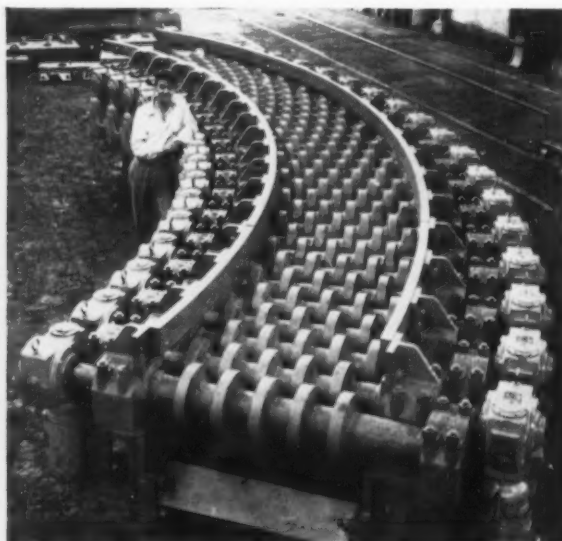
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STEEL FOUNDRY AND MACHINE CO.

STEEL MILL MACHINERY • HYDRAULIC PRESSES • CRUSHING MACHINERY • SPECIAL
MACHINERY • STEEL CASTINGS • Weldments "CAST-WELD" Design • ROLLS: Steel,
Alloy Iron, Alloy Steel



Two Flying Shears



Furnace Discharge Table (Curved Section)

FREE LITERATURE

Continued

These publications describe money-saving equipment and services . . . they are free with no obligation . . . just circle the number and mail the postcard.

Plant Location

Authoritative and helpful, a new booklet explains the benefits of locating in Pennsylvania. It tells of plant location services for manufacturers, distributors, engineering firms and management consultants. Advantages of setting include: labor, markets, transportation, industrial sites, financing, production materials, minerals, water supplies, fuel, existing industry. (Pennsylvania Dept. of Commerce).

For free copy circle No. 21 on postcard

Loading Assembly

A 4-page bulletin describes a new spring-balanced, slide sleeve loading assembly. This unit locks at any angle from vertical to 30° below horizontal. It is a flexible piping device for loading and unloading bulk fluids. (Jordan Industrial Sales Div., OPW Corp.)

For free copy circle No. 22 on postcard

Development Firm

Mechanical, electronic and hydraulic engineering and manufacturing facilities of a company are presented in a 4-page bulletin. It shows special electronic testing units made by the firm which check automatic pilot mechanisms. Other precision equipment and complex machines engineered and built to streamline various industrial operations are also covered. (Continental Technical Service, Inc.)

For free copy circle No. 23 on postcard

Data Processing

A fast-reading, 36-page guide deals with electronic data process-

ing. Written in non-technical language, it describes units of a well-known data system. How each works, and typical applications are covered. Techniques by which man uses the computer and much data processing jargon are explained. Programming, the survey, process charts, flow-charts, and instruction codes are discussed simply and clearly. (Remington Rand Univac Div., Sperry Rand Corp.)

For free copy circle No. 24 on postcard

Gear Making

To help celebrate its 50th anniversary, a gear manufacturer has prepared a pamphlet. It describes company facilities and its industrial background. (Braun Gear Co.)

For free copy circle No. 25 on postcard

Check Valves

Rubber lined, cushioned swing check valves are described in a bulletin. (Golden-Anderson Valve Specialty Co.)

For free copy circle No. 26 on postcard

Pyro-couple

Fast-reading metal-probe thermometers are covered in a 4-page bulletin. It shows two basic types: (1) integral probe; (2) remote probe. These have no batteries, no external connections. (Royco Instruments).

For free copy circle No. 27 on postcard

Machine Ways

Standard ways, wear plates, aluminum bronze slides and cross sections are described in a bulletin. It states that quick delivery is possible on six different cross sections, 60 different sizes. Ways are extremely hard (65 to 66 Rockwell C), uniform to a 3/16-in. depth. (The Ohio Knife Co.)

For free copy circle No. 28 on postcard

Steam Generators

Medium capacity steam turbine-generators are discussed in a 53-page booklet. It covers condensing turbines using either non-reheat or

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FREE LITERATURE

reheat; non-condensing turbines; single, double or triple automatic extraction turbines; admission units; and admission-extraction steam turbines. (General Electric Co.)

For free copy circle No. 29 on postcard

Abrasive Wheels

Machine mounting specifications for abrasive disks and plate mounted wheels have been approved and issued by the American Standards Assn. Standards cover location and size of bolt holes in steel disk wheels and the mounting size of abrasive disks and plate mounted wheels. They also cover definitions, sizes, types. (Grinding Wheel Institute).

For free copy circle No. 30 on postcard

Millers, Borers

Milling and boring machines are illustrated and described in a 24-page booklet. These machines, it states, feature exceptional universality, power, precision, ease of operation. (Innocenti Corp.)

For free copy circle No. 31 on postcard

Infrared Heating

Now ready is an 8-page catalog on new infrared equipment for linear heat sources. It deals with units available as complete ovens, components to build your own, and gold or aluminum reflectors. (The Fostoria Pressed Steel Corp.)

For free copy circle No. 32 on postcard

Microradiography

Projection microradiography is discussed in a folder. It shows photos and micrographs which illustrate a new instrument and its applications. (North American Philips Co., Inc.)

For free copy circle No. 33 on postcard

Infrared Warning

A company's literature describes a new long-range photoelectric control system. The setup uses invisible, modulated infrared light to protect large areas against intrusion. When

anybody enters the protected area, it sets off an alarm or warning signal. (Electronics Corp. of America)

For free copy circle No. 34 on postcard

Overhead Conveyors

Essential information and profit-making ideas are contained in a "one-volume library" on overhead conveyors. (The Rapids-Standard Co.)

For free copy circle No. 35 on postcard

Portable Tank

Complete specifications on a new portable wheel tank equipped with a measuring pump are given in a firm's literature. This unit adapts to most operations requiring transport and dispensing of liquids. It handles lube oils, paint oils, solvents, thinners, hydraulic fluids, process liquids or similar materials. (Bowser, Inc.)

For free copy circle No. 36 on postcard

Ovens, Furnaces

In 48 pages, a miniature catalog covers one maker's electric ovens, furnaces, water and oil baths, environmental cabinets and controlled temperature equipment. It gives size, temperature ranges, voltages, etc. (Blue M Electric Co.)

For free copy circle No. 37 on postcard

Fasteners

Stainless steel fasteners are covered in a 12-page catalog. It gives sizes and other data on government specification aircraft bolts, slotted and Phillips machine screws, flat and round rivets, and washers carried in stock. (Allmetal Screw Products Co.)

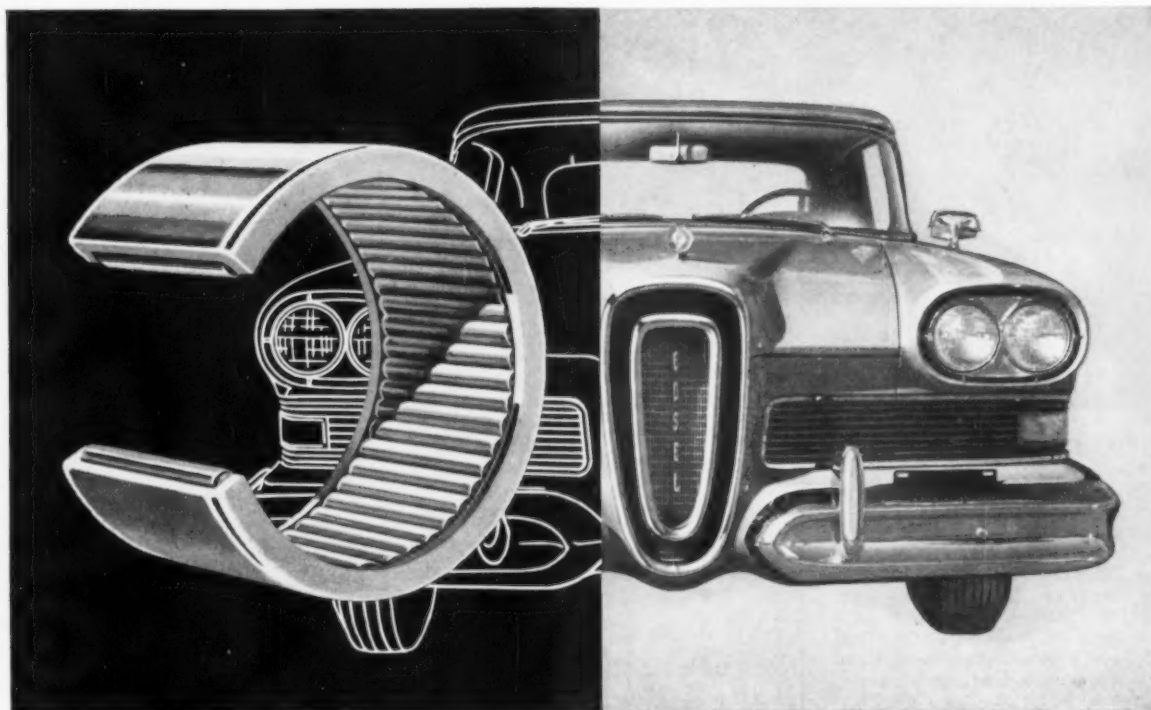
For free copy circle No. 38 on postcard

Cutting Compound

A handy folder describes a special cutting compound. It's for use on all modern machine tools. According to the folder, the product: (1) cuts rejects; (2) improves quality; (3) lengthens tool life; (4) increases production output (to three times); (5) reduces downtime. (Darco Industries, Inc.)

For free copy circle No. 39 on postcard

America's newest thin-shell needle bearing



... now in America's newest automobile

Developed with the cooperation of Ford Motor Co., these KAYDON bearings are used in the automatic transmissions of Edsel as well as Ford and Mercury

The 1958 Edsel, America's newest automobile, backed by more than 1,250,000 road-test miles, employs in its transmission, America's newest thin-shell needle bearings, introduced by Kaydon of Muskegon. Why?

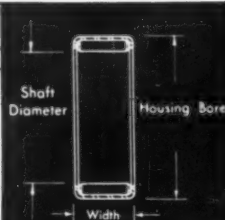
Proven in Ford-O-Matic and Merc-O-Matic transmissions, these Kaydon thin-shell needle bearings deliver 46% more bearing capacity.

Greater effective length of spherical end rollers does it. Important too, simplified construction, pre-packed lubrication, saves money

... and saves valuable time on the assembly line too! See table below for standard Kaydon thin-shell needle bearing sizes.

AVAILABLE FROM STOCK IN 5 STANDARD SIZES:		
SHAFT DIAMETER	HOUSING BORE	WIDTH
1.0605"	1.3130"	.500"
1.1250"	1.3755"	.750"
1.1250"	1.3755"	1.000"
1.1875"	1.5005"	.625"
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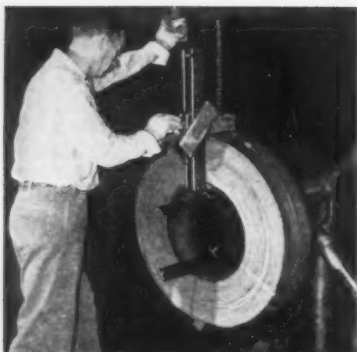


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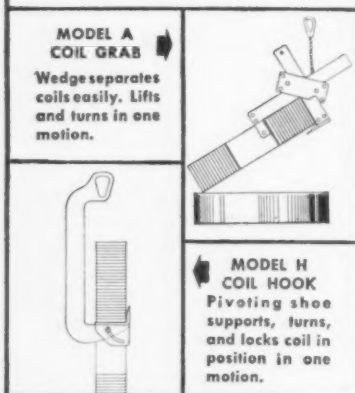


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Business Groups View 1958

At year end the U. S. Chamber of Commerce and affiliated groups took a long look at the state of the economy.

Here is a digest of the major reports delivered at its business forecast symposium.

The report on the general outlook is followed by rundowns of particular industries.

Overall Outlook:

Economy is strong . . . But minor adjustments are ahead.

Dr. Emerson P. Schmidt
Director of Economic Research
U. S. Chamber of Commerce

As always, there are expansionist and contractive forces in operation, but the consensus is that the contractive forces have the edge now. With only minor interruptions, we've had a steady boom since 1939—the longest boom in history. It is getting old, and there are signs that it is also getting tired.

While rolling readjustments have characterized the entire postwar period, there are signs that suggest we are in for something more than such minor adjustments. In a number of industries and sectors of the economy, peaks were reached as long as a year ago, and in some cases, two years ago, or even longer.

The 1955 peak in automobile sales has not been surpassed since and will not be reached in the year ahead. Housing starts reached more than 1.3 million in 1955, and have averaged only about 1 million since then. The Federal Reserve Indus-

trial Production Index touched a peak of 147 (1947-49=100) in December 1956, and has not attained that level since. In October, it touched 142, and it is likely to fall further in the next six months. Part of the readjustments, thus, has already been absorbed.

Readjustment Underway—The seeds of contraction are always sown in the previous boom. Wage increases have exceeded productivity improvements. Prices have risen and debts have grown. Rising wages, rising incomes and increases in new investment have characterized the last few years virtually throughout the entire planet. Mal-adjustments and distortions have developed.

While artificial attempts have been made to support raw material prices in many sectors of our economy and throughout the world, such prices have been under downward pressure for some time. The sensitive index of commodity prices is, today, lower than prior to the Korean War boom—at an eight-year low. Production of raw materials, particularly agricultural products and minerals, has outstripped demand and there is no early prospect of any substantial early recovery in most of these prices. But attempts are being made to bring production into line with demand in many cases.

The very fact that prices have been moving down does suggest that a readjustment has been underway. Possibly, such prices will not collapse drastically in the period ahead; this is a favorable factor. Meantime, however, countries relying heavily on raw material ex-

ports are left with reduced importing ability. This means lower world trade in 1958. Gold and dollar reserves among nations are unequally distributed and many countries face serious international payment problems.

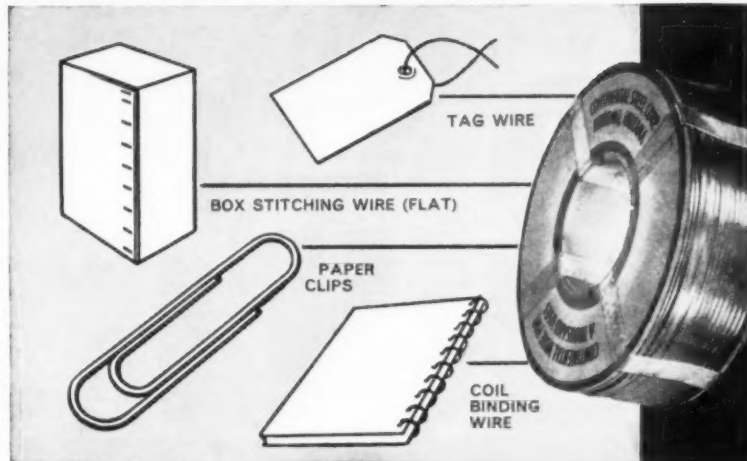
Unemployment—While employment, both here and abroad, has held up remarkably well, unemployment (4.6 pct of labor force in October, seasonally adjusted) has recently been increasing and is likely to continue to do so. Minor declines in job opportunities in the United States under our high levels of living have tended to reflect themselves in a decline in the labor force, rather than in an increase in recorded unemployment. Thus, the figures can be misleading. But if we have a normal (average) increase in the labor force in 1958 of around 800 thousand, unemployment is likely to reach 4 to 5 million, and possibly more.

The normal seasonal rise in unemployment, particularly in agriculture and construction, the layoffs in manufacturing, transportation, mining and other industries, plus the growth in the labor force can easily add up to 4 to 5 million, or even more, unemployed.

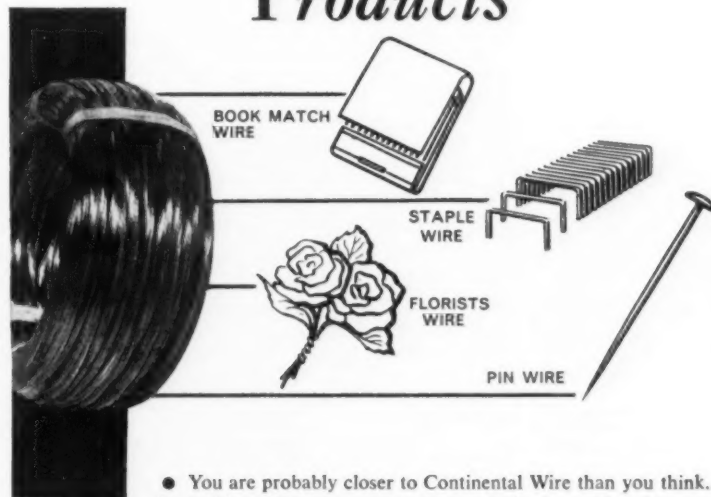
The over-full employment of recent years, plus the union-wage pressure, have caused the price of labor to rise more rapidly than productivity, and some labor is being priced out of the market.

Manufacturing employment has shown a fairly steady decrease month-by-month since the end of 1956. More than half-a-million workers have been dropped from factory payrolls since a year ago.

Orders and Inventories—While many manufacturers still have some backlogs of unfilled orders, for manufacturing as a whole the situation has worsened. In December 1956, unfilled orders had risen to over \$64 billion—the highest since the Korean War. Since then, new orders fell short of shipments month-by-month, and manufacturers have re-



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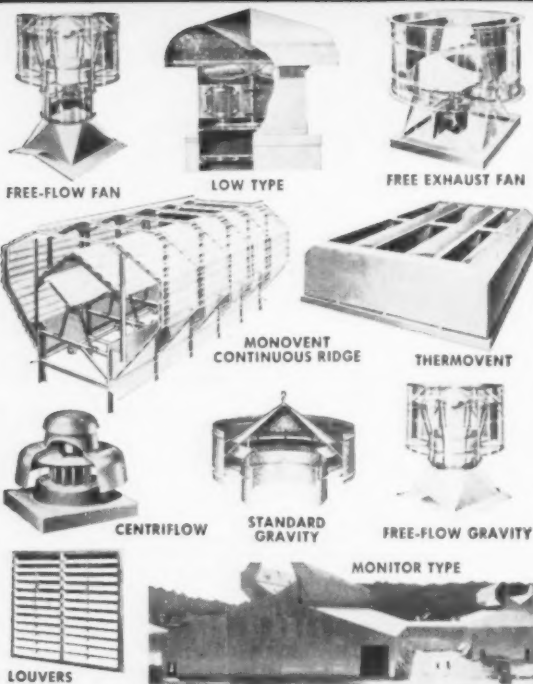
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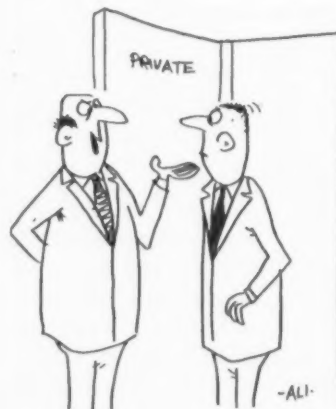
OUTLOOK

Continued

lied heavily on their order backlogs to sustain production. Unfilled orders have dropped nearly a billion dollars per month. Such a trend, if it continues, must lead to layoffs. Inventories are nearly \$5 billion above a year ago, mostly in factories. Some further decumulation in early 1958, with accompanying unemployment, is possible.

In many key items, such as ball bearings, castings, industrial heating furnaces, and machine tools—all good barometers of things to come—the order situation has been particularly weak. In machine tools, for example, new orders dropped to \$27 million in October, 58 pct below October of a year earlier. Backlogs in October were 3.7 months' output, as against 7.7 months' a year ago. The work week—another good barometer—has been declining. In October, it was lower than the average for 1954—a recession year. Steel scrap has declined in price by nearly 50 pct within a year.

Plant and Equipment—Today, with the decline in sales, most industries have excess capacity, although very few companies are as



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modern and up-to-date as they would like to be. We've passed through the greatest capital-building boom in history. In 1950 about \$21 billion were spent on new plant and equipment. In 1955 this had risen to \$29 billion; in 1956, to \$35 billion, and in 1957, to \$37 billion.

The Commerce and Labor Departments report that they expect a 5 pct increase in construction in 1958, or \$2.4 billion—a rise from \$47.2 billion in 1957 to \$49.6 billion in 1958. Residential construction is estimated to be up 6 pct; highways, 14 pct. The F. W. Dodge Corp. completed a survey somewhat earlier and concluded that in physical volume construction will be up about 2 pct and the dollar volume will be up about 5 pct. Both of these estimates are plus factors for 1958—but they could be on the high side.

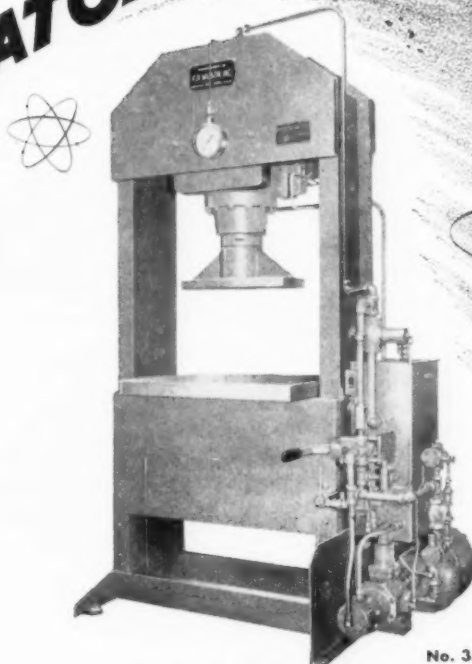
Our survey among trade associations revealed that only 16 pct of them thought that general business conditions would be better in the first half of 1958 than in the comparable period of 1957. But 40 pct thought that the second half of 1958 would be better than the second half of 1957.

About one-third expected better sales in their own industries in the first half of 1958, but this figure rose to about 50 pct for the second half of 1958. About 29 pct expect larger capital investments in 1958; but nearly 45 pct expect a reduction. For every trade group that thought inventories were too low in its industry, two of them thought that they were too high, but nearly 80 pct thought their inventories were at a satisfactory level.

Agriculture and Automobiles— Agricultural production and incomes are likely to change very little in the year ahead, relatively neutral in nudging the economy in either

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K. R. Wilson 3700AA-200-2 200-Ton Capacity Motor Driven Hydraulic Press combines all the features necessary to cut and press zirconium with maximum efficiency and economy. The 3700AA-200-2 is but one of scores of examples of the years-ahead technical thinking that makes any type of Wilson press your wisest buy.

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OUTLOOK

Continued

direction. Hog prices will be lower in the second half of 1958. Whether Congress will cut down on supplements to farmers' income is uncertain.

The automobile industry expects to sell about the same number of cars in 1958 as in 1957 including imports, although recent consumer reaction has been somewhat disappointing. Because of the sales peak in 1955, more than 900 thousand more installment contracts will expire in 1958 than in 1957. This suggests the possibility of a boost in sales, if no new disturbing factors develop. But it needs to be noted that it took an increase of \$1 billion in installment debt to hold auto sales in 1957 at about the 1956 level. With greater uncertainty now, consumers and lenders may not be disposed to repeat the 1957 performance.

The Money Market—The cuts in the Federal Reserve discount rates, beginning November 14th, have been followed by open market operations designed to increase credit availability. If the economy con-



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tinues soft in the months ahead, it is safe to assume that the FED will relax further. This has already lifted and will further lift the values of existing bonds, reduce the cost of credit and encourage credit expansion—all encouraging factors.

During the 1953-54 setback, in less than one year, yields on U. S. Treasury bills fell from over 2¼ pct to under 1 pct. Yields on 5-year Treasury securities dropped from 3 pct to about 1¾ pct. The decline in yields on long-term high-grade bonds was only a little over ½ or 1 pct, but that change put Victory bonds up 10 to par.

A similar decline in interest rates and improved availability of credit in the next 12 months should help spark many new loans and projects and make it easier for state and local governments to carry on their pending and new projects. Abundant financing should be available to finance over 1 million new housing starts in 1958, possibly 5-10 pct more than in 1957. This, in turn, would help many other related industries to increase their sales. But a rise in unemployment, or a threat of it, could generate caution in such heavy personal commitments.

Government—The National Government expenditures, in spite of the missile program, are not likely to rise very much in the next six months, but probably will rise in the second half. The U. S. Treasury will take in more money in the first half of 1958 than it will pay out to the public, and this may constitute a minor deflationary factor. U. S. Treasury revenues have not attained expected levels and deficit spending is likely to occur in the second half of 1958.

State and local expenditures have constituted a heavy growth factor for both goods and services since the end of World War II. It is gen-

erally expected that these expenditures will increase in 1958 at the rate of \$2.5-3 billion; however, in a number of states, revenues have been less buoyant than expected. If the recession should become more

serious, this could be a relatively weaker factor in the year ahead than has been the case in most recent years.

Summing Up—The stock market decline, occurring after mid-1957,

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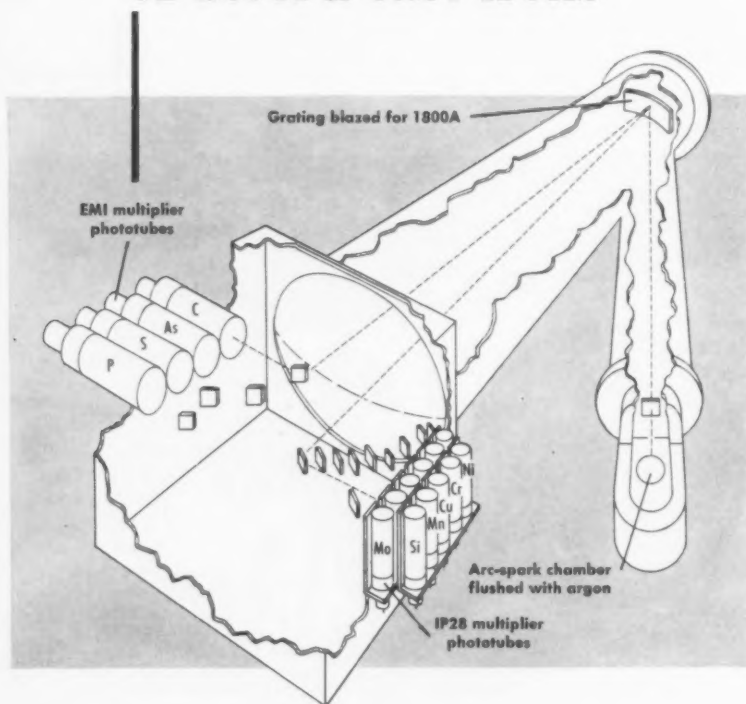
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OUTLOOK

Continued

foreshadowed the current general contraction in our economy. Stock prices will continue to rise and fall. There is some reason to believe that the stock market has largely discounted the degree of contraction. Because of its psychological impact and if there are no further prolonged major declines, this could help restore investor and consumer confidence.

Because we've had a credit restraint program, the monetary authorities are now in a position to relax this restraint and are almost certain to do so, unless the wage-price spiral shows serious signs of recurring.

In the 1949 and 1954 recessions, the economy benefited from substantial tax cuts. With the slim or doubtful balance in the Federal Treasury for fiscal 1958, many government officials are warning that a tax cut is not probable in 1958. However, if serious contraction continues, a demand for a tax cut might be generated and this would leave more funds in the hands of business and consumers, increase the money supply and improve the liquidity of business and individuals.

While the 1958 recession is likely to be at least as severe as in 1949



and 1954 (unemployment between 5 and 6 pct), the basic forces making for economic expansion in the long run are as strong as ever and are likely to help prevent any major collapse. Many of the essential readjustments have already been made. There is a possibility that before 1958 closes, expansionist forces will, again, exceed the contractive forces which are now clearly visible.

Autos:

Sideways move will turn upward in second half.

Rear Adm. F. J. Bell
Exec. Vice President
National Automobile Dealers Assn.

It now appears that last year's forecast for auto sales of slightly over six million units will be met. If so, 1957 would be the third best year ever.

In considering the general state of the economy, it is expected that the present sideways movement will continue through the first half of 1958. A gradual resumption of the upward movement will begin in the second half of the year.

The impact of the auto industry on the economy is tremendous. Retail sales at automotive stores in 1956 amounted to more than \$36 billion. One out of every six businesses is automotive.

Will Labor Strike?—One big "if" to any forecast is whether the UAW will strike next year. If there should be a prolonged strike, any present forecast would be nullified.

We presently estimate that auto dealers for the full year 1957 realized a net profit on sales before taxes of 1.1 pct, hardly a figure to indicate great prosperity for the auto dealers. However, the cleanup problem did not seem to present as

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As specialist for 65 years in the manufacture of lubricants for steel making, The Ironsides Company is especially pleased to honor Oscar Maag of The Timken Roller Bearing Company for his great contributions to our industry. It was our privilege, here at Ironsides, to work closely with Oscar Maag as our Company's consultant following his retirement from Timken, and to know him as both a great technologist and good friend. The Ironsides Company, Columbus 16, Ohio.

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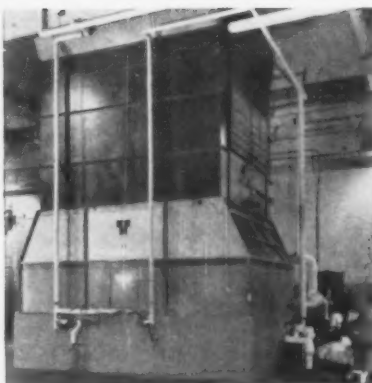


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OUTLOOK

Continued

much of a hurdle this past year as in some.

Debts Paid Off — A substantial number of 1955 auto buyers have now paid off their auto debts and are again potential customers. Sufficient credit appears available for the average 60 to 65 pct of auto buyers who buy "on time."

Current reports indicate that the 1958 models have been well received, in spite of the price increases. On the basis of the relationship between auto price increases and increased income expectations, it does not appear that increased auto prices will have too much of a dampening effect upon demand.

Our estimate, therefore, for 1958 auto sales is slightly more than this year, or from 6.1 to 6.2 million new units.

Electronics:

Best year this time . . . Even better seen next year.

J. D. Secrest
Exec. Vice President
Electronic Industries Assn.

Having just achieved a new record in production and dollar volume in 1957, the electronics industry looks forward to an even better year in 1958.

Factory sales of electronic products rose from \$5.9 to more than \$7 billion this year. Another increase of 8 to 10 pct is expected in 1958.

Military procurement led the electronic increase in 1957, rising from \$2.7 billion to nearly \$3.5 billion. Greater emphasis on missile output and a higher defense budget are certain to boost this figure in 1958. Research expenditures also will rise.

Factory Sales Jump—Industrial uses of electronics continued to

increase in 1957. Factory sales increased from \$950 million to \$1.3 billion. Further growth is indicated in this market in 1958.

Only TV receiver production declined during the past year, but greater stability and balanced inventories improved the profit position of most companies. Retail sales declined less than factory output. Manufacturers believe both production and sales will rise in 1958.

Radio set output continued its climb to near post-war peaks, rising 9 pct above 1956, and gave every indication of continuing upward in 1958. Phonograph sales rose 16 pct in 1957 and are expected to pass the 5-million-a-year mark in 1958.

Component Making Up—Component manufacturers' sales were above those of 1956. This was largely because of the rising replacement market which gained another \$50 million to reach \$900 million for the year. Transistor sales reached 27 million — more than double the 1956 figure.

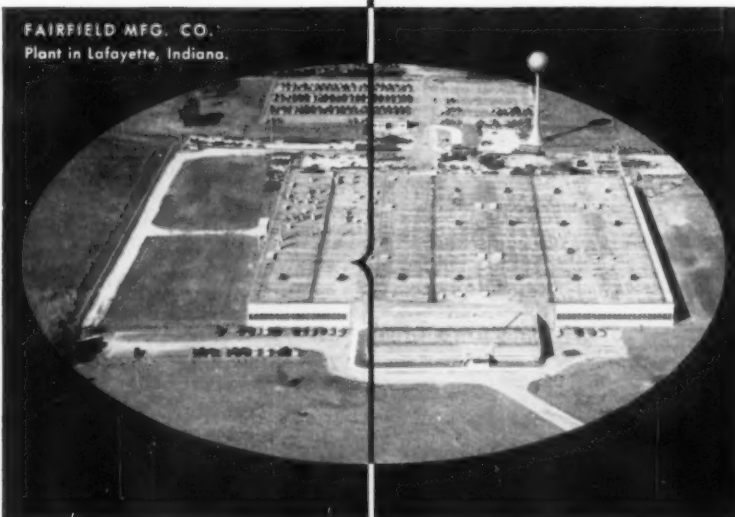
The international market was



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When you need it NOW call Wheelock-Lovejoy!
—for Alloy Steel bars, billets, forgings

Some jobs won't wait for red tape. When you want steel in a hurry—just pick up the phone and call your nearest Wheelock, Lovejoy warehouse.

Expert W-L metallurgists will help you choose the right stock for the job.

Write our Cambridge office today for your free Wheelock, Lovejoy Data Sheets. They'll give you complete technical information on grades, applications, physical properties, tests, heat treating, etc.

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WHELOCK, LOVEJOY & COMPANY, INC.
126 Sidney Street, Cambridge 39, Mass.

OUTLOOK

Continued

less favorable. Exports declined as imports, particularly from West Germany and Japan, increased.

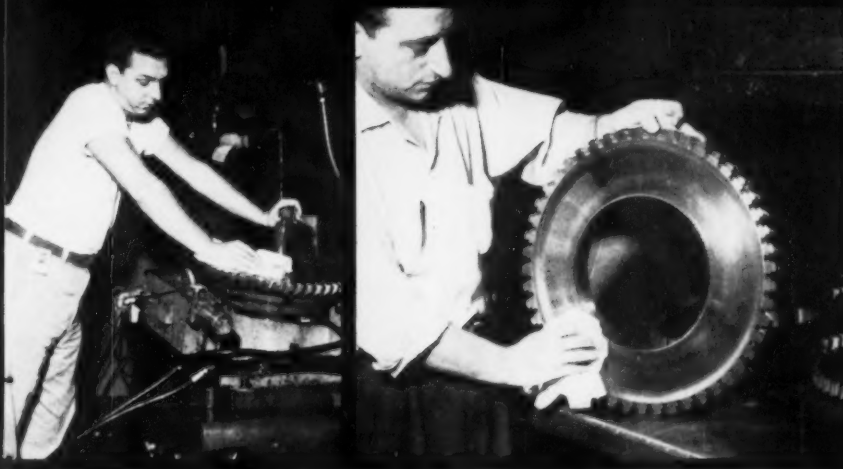
Television retail sales were off about 4 pct in 1957, while production declined 12 pct. Approximately 6.5 million TV sets will have been manufactured by the end of the year and a like amount sold, according to present estimates. In 1958 the industry expects to make and sell 7 million or more television receivers with further increases in portables which this year accounted for about 25 pct of the total.

Color TV Is Off — Color TV made some progress when actively merchandised but failed to reach the large volume anticipated earlier.

On the wave of rising interest in high fidelity, binaural sound reception, and home tape recorders, the radio segment of the electronics industry is experiencing a boom. Factory production rose from 13.9 to 15.3 million units in 1957.

Defense Spending Surprising — While the steady growth in industrial electronics in 1957 was expected, the sharp rise in military spending in the face of pre-Sputnik defense cuts was surprising.





people
buy
Scott Wipers
for
many
reasons:

Curtiss-Wright likes "safety and savings" of Scott Wipers!

Soft, highly absorbent Scott Wipers have been performing efficiently for 3 years throughout the Wright Aeronautical Division of Curtiss-Wright Corporation, Wood-Ridge, N.J. Fresh Scott Wipers—right out of a box at each work station—eliminate the hazards of cuts and scratches from clinging metallic chips and shavings. Disposable Scott Wipers are burned each day. And as Mr. J. Boydell, Machine Shop Foreman, says: "We keep Scott Wipers so busy, we don't really have time to keep checking the savings they effect—but we're not worried! Our experience with Scott Wipers tells us that we're getting *all* the special advantages these wipers are known to offer!" He adds that savings are "sizable."



Maker of the famous Scott paper products you use in your home. See "Father Knows Best" and "The Gisele MacKenzie Show" on NBC-TV.

Find your Scott distributor in the Yellow Pages under "Paper Towels." He has the Curtiss-Wright case history for you, with complete facts and figures . . . and many others, covering many fields. Or write: Scott Paper Company, Dept. 1A-81, Chester, Pennsylvania.



Curtiss-Wright uses Scott Wipers for wiping parts before broaching, broaching machines themselves, grinding machines, and at inspection stations. They are soft, yet tough—and their wet strength makes them ideal for wiping up oils and coolants.



WHICH HOIST

fits your plant's needs?



**SHEPARD NILES
FLOOR-OPERATED HOIST**

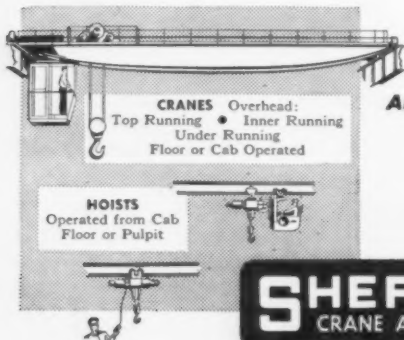
Operator primarily occupied with other duties. Uses hoist for fast, efficient handling of relatively short hauls.



**SHEPARD NILES
CAB-OPERATED HOIST**

Operator in cab moves loads along at high speeds, occupies best vantage point for spotting and stacking material.

THE RIGHT HOIST . . . can reduce your plant's handling costs. But which one is best for the job . . . a floor-operated hoist where the operator is freed for other duties or a cab-operated hoist where he is engaged fulltime moving loads through the air? Because Shepard Niles manufactures both types of hoists . . . as well as a complete line of cranes . . . we can approach your handling problem with an open mind.



● Send for Bulletins describing Shepard Niles Cab and Floor-Operated Hoists. And request our representative to call.

**America's Most Complete Line
of Cranes and Hoists**

Since 1903

SHEPARD NILES
CRANE AND HOIST CORPORATION

1488 Schuyler Ave., Montour Falls, N.Y.

OUTLOOK

Continued

Scrap:

**Downward scrap price trend
could abruptly swing up.**

E. C. Borringer
Executive Vice President
Institute of Scrap Iron & Steel

The steel industry is completing a year in which production of steel ingots ranks third-running behind record-level 1955, also behind 1956. It's a year which, on the whole, lived up to expectations except that the decline in the fourth quarter has been steeper than originally foreseen.

Last year we thought steel output in the first half of 1957 would exceed the second half. We estimated 1957 production would be about the same as 1956 — 115-million net tons, perhaps slightly under this figure. On the basis of production statistics for the year to date, it looks as though this estimate was very close.

Year Was Deceptive—But 1957 has been deceptive on two counts: First, the year as a whole looks a lot better than the final quarter. After all, third highest production



"Sure, I promised the suit for today, but well, we know how it is, don't we, Senator?"

in the history of the nation is not a bad level to attain. Second, while the steel operating rate and the volume of finished mill products shipped has been falling since mid-year, actual consumption by steel users throughout the country has been maintained.

Actually, 1957 should be the year with the highest steel consumption on record. This means, of course, that consumers have been drawing down on their inventories.

Scrap Is A Barometer—Of all the raw materials which steel mills purchase, scrap has probably the greatest market significance. Scrap apparently has regained some of its position as a barometer of steel industry activity.

Except for a rise at mid-year, scrap began to decline back last January. It dropped from over \$59 a ton at the start of the year to about \$32. Similarly, shipments of scrap to the steel mills declined from 39 million tons last year to about 33.5 million tons this year.

Downswing Coming?—As we go into 1958, the price of scrap shows a tendency to end the downswing. Not much, but the feeling is there. Mills are conscious of the fact that it would not take much to turn the market abruptly upwards.

On the other hand, these same mills are reducing the number of blast furnaces in operation. This is an action they do not take lightly because of the cost involved. Spelled out, this means that they do not see sufficient demand for steel in 1958—at least the early part—as compared to 1957.

Consumer Is Key Man — The steel industry will move as the general economy moves. Demand for steel is not something of itself. It's derived from the demand for every single product made from steel or containing steel. In this,

if the question is perforating...

Ever stop and think that the answer to your design problem may be simple perforations? Whatever material you're working with, if it's metal, masonite, rubber, plastic, hard or insulated board for decorative or display usage, Hendrick can help you.

Over a period of many, many years Hendrick has built up the largest stock of dies commercially available.

If you are faced with the need for perforated materials.



the answer is HENDRICK!

or if you would like more information on how perforating can enhance the sales appeal of your products, get in touch with Hendrick today.



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37 DUNDAFF STREET, CARBONDALE, PA.
Sales Offices in Principal Cities

Perforated Metal • Perforated Metal Screens • Wedge-Slot Screens • Architectural Grilles • Mitco Open Steel Flooring • Shur-Site Treads • Armorgrids



Gas Fired, Oil Fired and Electrically Heated **FURNACES** for these and other heat treating requirements

AGING	CONTROLLED ATMOSPHERE	NORMALIZING
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BRASS BRAZING	GLASS HEAT TREATING	SPHEROIDIZING
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BRIGHT HARDENING	HOMOGENIZING	STRIP COATING—ANY PROCESS
CARBON RESTORATION	MALLEABLIZING	STRESS RELIEVING
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CARBURIZING, GAS, ETC.		

EF engineers specialize in designing and building production furnaces—continuous and batch types—including roller hearth, roller rail, chain belt, wire belt, slot and tube conveyor types, reciprocating, rotary, car, bell, pit and other designs; complete with special atmosphere producers, and time and labor saving material handling equipment as required.

Reflecting more than 40 years of continuous research and experience, and outstanding engineering accomplishments, EF furnaces combine high heating efficiency, accurate automatically controlled cycles, and advanced designs that minimize maintenance, assure economy of operation, high hourly output and uniformity of product.

Submit your production furnace problems to experienced engineers — it pays.



BULLETIN No. 461

shows typical installations of EF Gas-fired, Oil-fired and Electric Furnaces.

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OUTLOOK

Continued

however, the variable which is perhaps most important, and which is least susceptible to accurate statistical tabulation, is consumer inventory planning. And for the year as a whole we look for consumer spending to hold up.

Consumption will probably continue to be high approximating the level of 1957. There will be continued drawdown on inventories, particularly during the first part of the year. This will affect the ingot operating rate. Steel capacity is going to rise at the start of the year.

We do not look for steel production during 1958 to be much greater than during 1957. It might be in the range of 115,000,000 to 116,000,000 net tons.

Consumer Credit:

Look for a 10 pct increase in consumer credit.

C. F. Hawver
National Consumer Finance Assn.

Consumer credit plays an ever-increasing part in today's economy. It is recognized as an integral part of everyday and business activity, and a part of the very framework of family life.

Briefly, consumer credit refers to short and intermediate term credit which consumers use to acquire goods or services or to pay debts. It is divided into two basic types depending upon how it is to be repaid: non-instalment credit and instalment credit. The latter is repaid in two or more regularly-spaced instalments.

Credit Helps Business—All industry benefits from consumer instalment finance. But some are more dependent than others. Home appliances, for example. Automobiles finance over two-thirds of

their entire production. Mass production, mass distribution and mass consumption financing, support production and employment advantageous to all facets of our economy.

The American family has come to accept consumer credit as a means to better living, better health, better education and self-enforced saving as well as a means of meeting sudden emergencies which cannot or should not await the accumulation of new savings. In good times and bad the American consumer's record of repayment proves that he is a good money manager and a good credit risk.

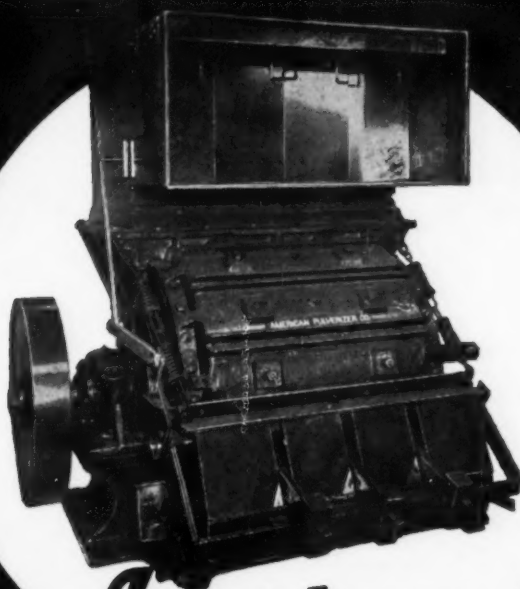
Attitudes Are Changing — The changing attitude of consumers about the use of consumer credit is an important factor in any projection. People have tried consumer credit and they like it. When confident or optimistic about the immediate future, they willingly commit themselves to instalment payments. When income is re-



"When I asked him for a raise, he pulled one of those trick questions. He asked me to give him one good reason."

CASH IN YOUR CHIPS

Change Metal Turnings Waste
into More Profitable Shoveling CHIPS



American
METAL TURNINGS

CRUSHERS

No progressive, profit-conscious company—who produces 10 or more tons of metal turnings per month—can afford to ignore the profit potential of a modern chip salvage system . . . with an American Metal Turnings Crusher at the core.

American installation profits include: \$4 more per ton for chips than for machine turnings; up to 50 gallons per ton in cutting oil recovery; 75% less storage; easier, faster handling.

How many profit dollars are you losing under present operations? If, for example, you're currently producing 20 tons of turnings a month . . .

THIS COULD BE YOUR PROFIT STORY FOR NEXT YEAR!

240 Tons Metal Turnings per Year	\$ 960.00
(20 tons/month at \$4 extra per ton)	
6,000 Gallons Recovered Cutting Oil at 30¢/Gal.	\$1,800.00
(50 gals. per ton x 240 tons = 12,000 gals.)	
Half of this, 6,000 gals., can be credited to use of chips instead of turnings in reclamation)	
Estimated Savings in Manpower, Storage, Tools, Maintenance, Freight, etc.	\$ 300.00
TOTAL GROSS PROFIT	\$3,060.00



WRITE for Metal Turnings Crusher Bulletin.

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Metal Stamping Facilities

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at your Service for...

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Lansing Stamping Co.
ESTABLISHED 1914
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OUTLOOK

Continued

duced or they see declining prospects in the immediate future and they retrench.

Today, signs in the industry indicate that the consumer is optimistic and that he will, as he did in 1954, continue his present credit buying pattern based on his belief that his income in 1958 will be as high or higher than in 1957.

Consumer Feels Sound — The sound financial position of the consumer, coupled with his favorable attitude toward credit and his optimistic outlook for 1958, should continue a steady demand for consumer credit throughout 1958. The rate of consumer credit increase may be somewhat slower than the 1957 rate for the first two or three quarters but should pick up substantially in the final quarter and perhaps in the third.

Growing acceptance of consumer credit should account for a 10 pct rise in credit outstandings in 1958, as former users continue at about the same level and new users make up the anticipated increase.

Will Credit Exist?—A vital question in 1958 is whether enough money will be available to credit issuers to handle the increased consumer credit demand. A 10 pct increase would require some \$3 billion of new money. But present indications are that it can and will be provided from the substantial liquid savings of the American people, through the commercial banks, insurance companies, and other short term and long term issuers of credit lines.

In summary, we believe that a 10 pct increase in consumer credit may be expected during the coming year.

SILENT HOIST LIFTRUK

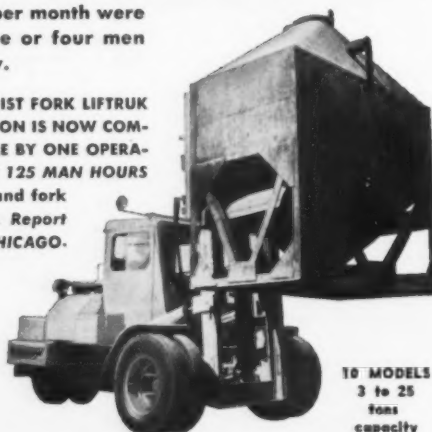


**INLAND STEEL IS SAVING approx. 125 MAN HOURS
EACH MONTH on JUST ONE SPECIFIC REQUIREMENT**

"Four to six cars of carbide per month were formerly unloaded by three or four men working eight hours per day.

"THROUGH THE USE OF SILENT HOIST FORK LIFTRUK Model FK 7 1/2, THIS SAME OPERATION IS NOW COMPLETED IN A PORTION OF THE TIME BY ONE OPERATOR . . . SAVING APPROXIMATELY 125 MAN HOURS PER MONTH" . . . releasing men and fork truck for other useful purposes. Report from INLAND STEEL CO. EAST CHICAGO.

SILENT HOIST LIFTRUK is a real work horse — operates long periods without maintenance — on muddy or irregular terrain. STANDARD EQUIPMENT includes Fluid Drive, Power Steering, High Undercarriage, extra large torque multiplier for traction.



10 MODELS
3 to 25
tons
capacity

Ask for Bulletin No. 77.

SILENT HOIST & CRANE CO.
Pioneer Mfrs. of Heavy Duty Materials-Handling Equipment
851 63rd Street, Brooklyn 20, N. Y.

Construction:

Good year coming . . . Expect costs to stabilize.

W. G. Dooly
Manager, Public Relations
Associated General Contractors of
America, Inc.

Another good year for over-all construction volume is in the making. The value of new work put in place rising some 4 pct over 1957 to about \$49 billion seems possible at this time. Costs are expected to tend to stabilize.

Total volume is expected to be buoyed up principally by increases in highway and residential construction.

The business sector of construction is not expected to rise in 1958. Industrial activity, influenced by a decline in capital expenditure plans — especially in the manufacturing

field—probably will drop 10 pct to a level of about \$2.6 billion. Commercial construction is expected to stabilize near the current annual total of \$3.6 billion. Public utilities will continue to be the mainstay in business construction, with an expected total reaching \$6 billion.

Public Works To Go Up—State and local public works will dominate the public field, accounting for about three-fourths of the \$15 billion total. Increases are expected in highways, schools, hospitals and local government buildings.

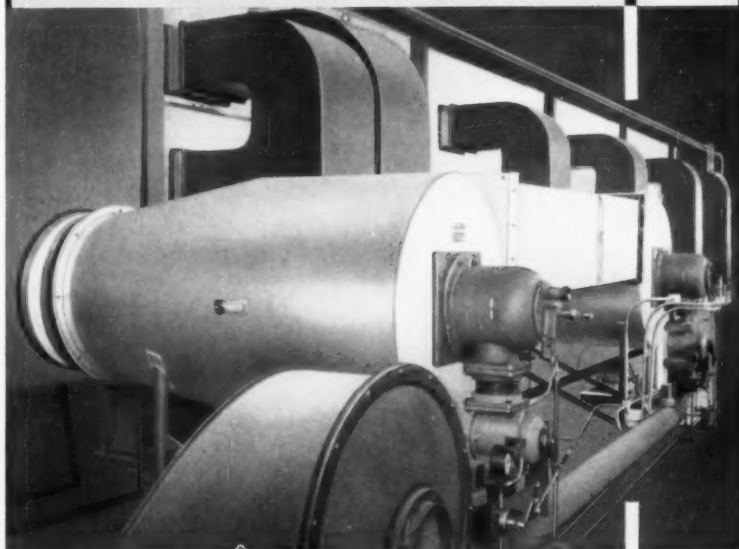
Highway construction put in place will show the first big spurt in 1958 under the influence of the long-range program initiated in the summer of 1956. A 15 pct increase is anticipated. This would bring the annual volume to about \$5.6 billion. From 1958, an expanding highway program for years to come will be a major factor in the construction picture, stimulating other types of construction such as industrial.



"Patience, board members—I expect Bently any minute now with this month's production report!"

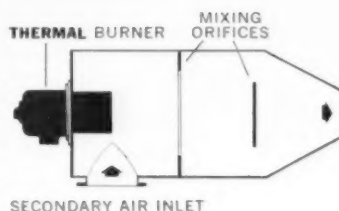
THERMAL'S PACKAGED AIR HEATERS

RATED OUTPUTS TO 20,000,000 BTU/hr



COMPACT...OIL OR GAS FIRED

Extremely versatile design permits the THERMAL Type CA heater to be used in a wide variety of installations and with either gas, oil or combination firing. Shown here is a tunnel dryer installation of the Edgar Plastic Kaolin Co., Edgar, Florida. THERMAL CA air heaters with #7028 burners provide 4,000,000 BTU/hr each using #2 fuel oil. These air heaters are equally adaptable to kilns, ovens, spray dryers and many other installations where products of combustion may be mixed with the air.



NO REFRACTORY REQUIRED

The CA air heater is built around the THERMAL high velocity burner. Because of its unique design, combustion takes place almost entirely within the burner. It normally requires no refractory and provides maximum utilization of available space.

WRITE FOR BULLETIN #104

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REPRESENTATIVES IN PRINCIPAL CITIES



**"No need to check
those 36" shaved
Cincinnati Gears...**

**those people
have the latest
inspection equipment!"**

Many manufacturers rely on Cincinnati Gear's up-to-the-minute facilities and inspection policies to save this expense in their plants. They know that the "CINTI" trademark on a gear means "to specifications" — because every Cincinnati gear is carefully inspected at the factory!

This acceptance stems from a half-century of quality custom gear making. Our production and inspection keep apace with technology through a continuing replacement program which applies to everything except our "old-fashioned" ideas about craftsmanship, service and attention to details.

Involute inspection charts available for all shaved and ground tooth gears. Shaving capacity 36" — grinding capacity 25".

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good gears only

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Wooster Pike and Mariemont Ave.

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Custom Gear Makers Since 1907

OUTLOOK

Continued

Railroads:

**Outlook is cloudy . . . but it
looks somewhat lower.**

B. N. Behling
Economist

Assn. of American Railroads

To an unusual degree, the general business outlook for 1958 is clouded with uncertainties and cross currents. But on balance it now appears that the level of economic activity in 1958 may be moderately below that in 1957.

For the railroads the prospects in 1958 depend primarily upon the course of general business conditions, particularly in the heavy goods industries. It is estimated that freight traffic (ton-miles) in 1958 may be 5 pct below the indicated total for 1957 and 9 pct under 1956.

Passenger traffic (passenger-miles) is expected to decline about 5 pct below 1957. This would be 12 pct less than in 1956. Total revenues may hold close to the 1957 level, since the railroads will have the benefit for the full year 1958 of the freight rate increases which became effective in August 1957. There also may be other



"Leave your new design out where everyone can see it, Chester. We have a spy in the office and need some worthless plans he can steal."

rate and fare adjustments during the year.

Earnings Will Decline — The outlook as to railroad earnings in 1958 is unfavorable. Persistence of inflationary cost trends for wages and materials will cause this. Such increases can be offset only in part by rigid expense controls and measures of improved efficiency.

Wage increases of 12 cents an hour which became effective November 1, 1957, will amount on an annual basis to approximately \$300,000,000. As of January 1, 1958, there will be an increase of ½ of 1 pct in the tax rate for unemployment compensation. A further contractual wage increase of seven cents an hour is to become effective November 1, 1958. Moreover, there may also be additional cost-of-living wage adjustments to be met during the year.

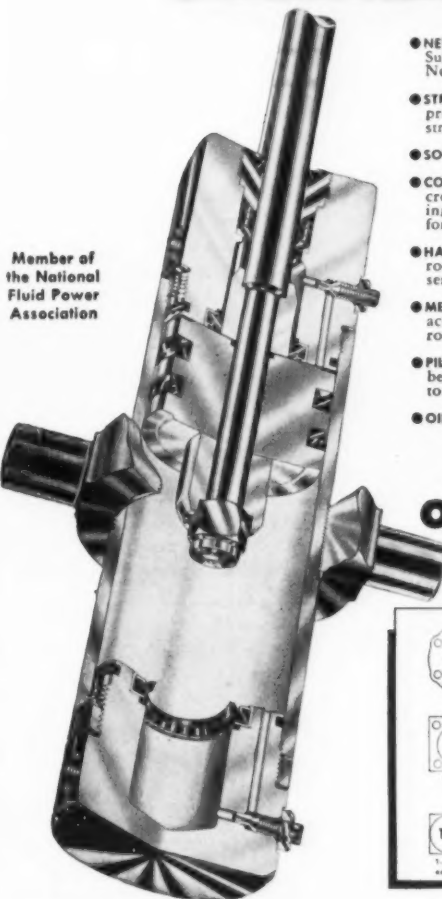
Consequences Are Serious—The consequences of such cost increases are obviously more serious. They are more difficult to offset too, during a period of static or declining traffic volume than when business and traffic are on an upward trend.

For the reasons indicated, it is estimated that net railway operating income in 1958 will drop to approximately \$800 million. This is 16 pct below 1957 and 25 pct under 1956. Net income of the railroads, after fixed charges, is expected to fall to about \$600 million in 1958, or 20 pct under 1957 and 32 pct below 1956.

On the basis of these projections as to net earnings, capital expenditures for improvements of railroad plant and equipment are likely to drop to about \$1 billion in 1958, as compared with an estimated \$1.4 billion in 1957 and with \$1.23 billion in 1956. This sharp decline reflects the fact that, at their existing

all the EXTRAS are standard with

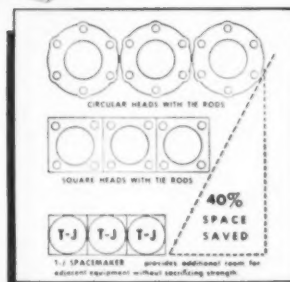
(T-J) Spacemaker CYLINDERS



Member of
the National
Fluid Power
Association

- **NEW exclusive ingenious cushion designs**... Super Cushion Flexible Seals for Air... New Self-Aligning Master Cushion for Oil.
- **STRONGER** than outmoded tie rod design, proven through actual tests. No tie rods to stretch.
- **SOLID STEEL HEADS** throughout the full line.
- **COMPACT DESIGN** eliminates tie rods, increasing the strength and reducing mounting space required, providing extra room for adjacent equipment.
- **HARD CHROME PLATED** body bores and piston rods... assure you of long trouble-free service. (Standard at no extra cost.)
- **METALLIC ROD SCRAPER**, not just a wiper, actually removes foreign matter from the rod.
- **PILOTED PACKING GLAND** with extra long bearing. Additional strength and support to the piston rod.
- **OIL pressure** to 750 p.s.i. AIR to 200 p.s.i.

**DELIVERY
OFF THE SHELF!**



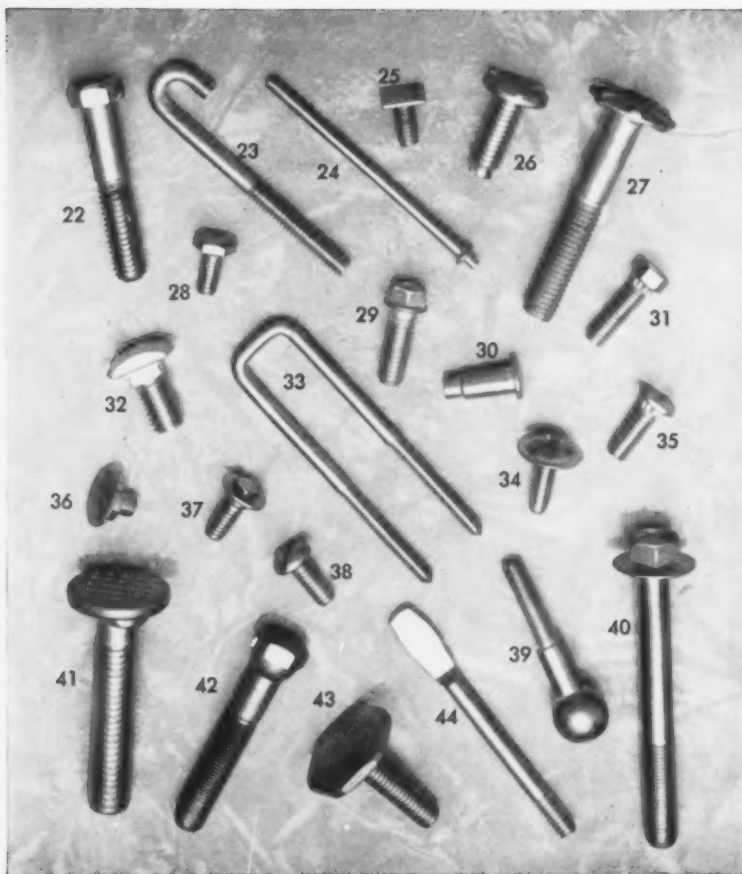
You save 40% space when you switch from outmoded tie rod cylinders to the T-J Spacemaker! It's stronger, too! Fits right into automation programs in countless plants. Delivers top performance

and dependability with a big plus in advanced features. Wide range of styles, capacities... reduces man-hours and costs in all kinds of push-pull-lift jobs. Off-shelf delivery in 64,000 combinations!




NEW LITERATURE—Send today for new Catalog SM56 with complete engineering details on Spacemaker line. Write The Tomkins-Johnson Co., Jackson, Mich.


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DIVISION: AIR AND HYDRAULIC CYLINDERS, CUTTERS, CLINCHERS



Special  Fasteners — Sample brochure sent upon request

LOOKING FOR SOMETHING LIKE...these?

Just a few of the hundreds of  specials used to increase strength, improve design, eliminate vibration... make better products faster.

If any of these specials could speed your production... reduce costs... do a better job than the fasteners you're now using, it will pay you to call .

For unusual jobs... extreme conditions, our engineers will gladly cooperate in producing the special fastener design you need.

BUFFALO BOLT COMPANY
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JACKson 2400 (Buffalo)

Many **GOOD** products
can be made **BETTER**
...with



**SPECIAL
FASTENERS**

OUTLOOK

Continued

low level of earnings, the railroads must depend mainly upon such earnings rather than external methods of financing to provide capital funds.

Chemicals:

See 5 pct more sales in '58...
'57 profits drop.

Gen. John E. Hull
President
Manufacturing Chemists' Assn.

The chemical industry rose to third rank in total assets (\$19.2 billion) for all manufacturing industry during the first half of 1957. This position may be maintained and—or improved.

A sales record will be established for the industry when final returns for 1957 are tabulated. Anticipated total: \$24.4 billion. An additional increase of five pct is forecast for 1958. Production continues to climb.

Percentage-wise, profits for '57 will be under those of '56. Profits



THE IRON AGE

"They're for work. I want something that will look good on a mahogany desk."

after taxes for the first six months of 1956, for example, were 8.3 pct; for the first six months of this year they were 7.8 pct. This trend is ascribed primarily to rising costs of labor and distribution.

Wholesale Prices Up — The Wholesale Price Index for chemicals was 110.2 in September; for the same month last year the figure was 107.7.

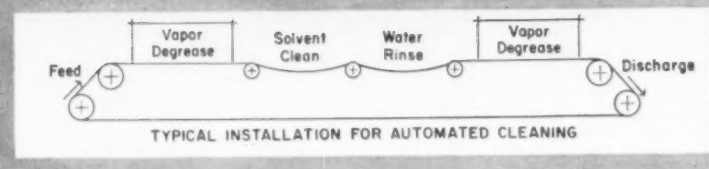
Capital investment in 1957 is estimated at \$1.8 billion. The industry spent an estimated \$498 million on research and development in 1957; an average of 400 new products are being introduced each year.

Total employment for the year increased slightly over 1956; average for the first nine months of '57 was 837,000.

The chemical industry is the fastest-growing of all major manufacturing industries. The outlook is bright. It continues to be an excellent long-term investment; the prospect for short-term returns is heartening.

Research Spending — This stems from an anticipated increased return on cumulative investments for research and development and new plants and facilities, the opening of new markets and the enhancing of old ones and extensive cost-cutting programs. Expenditures for research and development and expansion will continue at the present rate, however, and the industry will maintain its lead in basic research. There probably will be selective price increases in 1958. Some problems facing the chemical industry include the shortage of qualified scientists and engineers, current high rate of corporate taxes and inadequate depreciation allowances on certain classes of capital investment.

Cambridge WOVEN WIRE BELTS



Open mesh assures product uniformity in continuous processing

Cambridge Woven Wire Belts provide thorough, uniform degreasing or washing because cleaning solutions and vapors circulate freely *through* the open mesh of the belt to reach all parts of the product. In one continuous operation, parts can be carried through a degreasing, rinse, degreasing cycle to maintain capacity production. In heat treating, brazing, annealing and quenching operations too, Cambridge belts cut operating costs and increase production. Here's why:

CONTINUOUSLY MOVING BELT ELIMINATES BATCH PROCESSING for faster, more economical production.

ALL-METAL CONSTRUCTION RESISTS CORROSION, HEAT; takes temperatures up to 2100° F.; has no seams, lacers or fasteners to weaken or break.

OPEN MESH ALLOWS RAPID DRAINAGE of process solutions; assures thorough immersion of product.

SPECIAL CROSS FLIGHTS OR RAISED EDGES are available to hold product on belt during inclined movement.

Talk to your Cambridge **FIELD ENGINEER** soon — he'll explain the many advantages of continuous heat treating on Cambridge belts. And, he'll recommend the belt size, mesh or weave — in the metal or alloy — best suited to your operations. You'll find his name in the classified phone book under "BELTING, MECHANICAL". Or, write for **FREE 130-PAGE REFERENCE MANUAL** giving mesh specifications, design information and metallurgical data.



The Cambridge Wire Cloth Co.

WIRE CLOTH

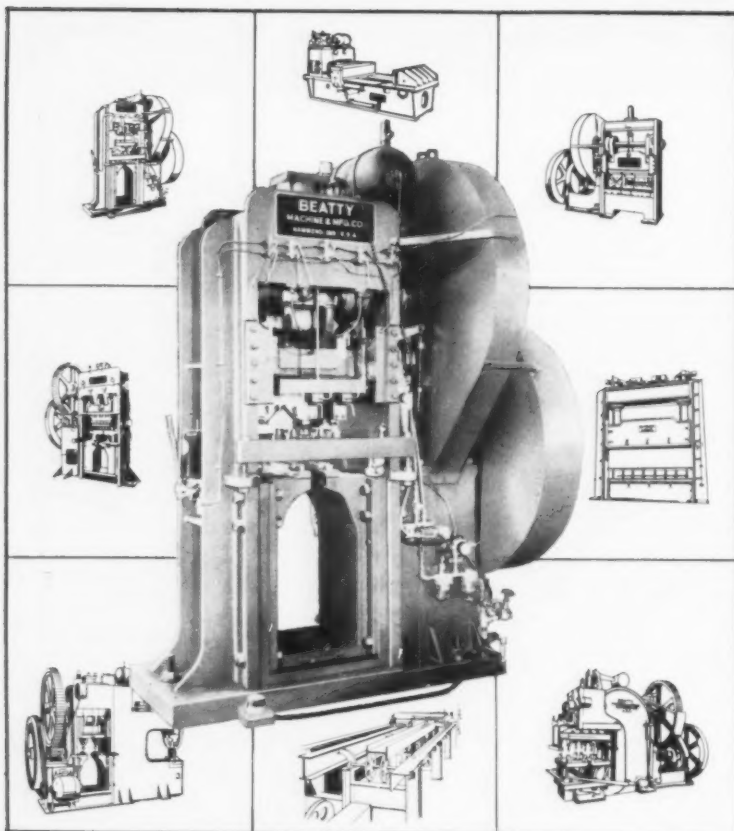
METAL CONVEYOR BELTS

SPECIAL METAL FABRICATIONS

Department A,
Cambridge 1,
Maryland



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OUTLOOK

Continued

Air Transport:

Jet Age arriving amid two major financial problems.

John Hoving
Vice President
Air Transport Assn.

This year will mark the beginning of the jet age in air transportation. For 1958 will see the start of delivery to the domestic airlines of more than 350 jet and turbo-jet aircraft. Delivery of these planes, which will triple the investment in flight equipment, will extend through 1961.

These aircraft, according to estimates by the airlines, will generate in normal commercial usage some 39 million seat miles per year. This figure is 6 1/2 times the passenger miles flown by the domestic trunk lines in 1947.

However, the industry is confronted with the need for earnings commensurate with costs and risks of financing the public service and national defense obligations they have taken.

Faces Two Problems—The industry faces two crucial problems



THE IRON AGE

"It's a new wage formula, chief . . . it's a raise based on what my wife spends instead of what I earn."

if they are to continue improving passenger service. Each problem indicates the need for an upward adjustment of domestic airline fare levels. These problems are:

(1) Deterioration of earnings: A 5-year adverse trend sharply accentuated in the last 22 months has impaired the earnings position of the airlines generally.

(2) Financing the coming jet age: At the same time domestic airlines are in the midst of securing substantial money needed to finance the jet revolution.

Foreign Trade:

Commercial exports may drop 5 pct or more.

D. F. Heatherington
Director, European Div.
National Foreign Trade Council

Since 1953 there has been an uninterrupted increase in U. S. commercial exports, with the increase between 1953 and the end of 1957 amounting to more than \$7.5 billion. Imports likewise have grown, but to a lesser extent or by only about \$3.2 billion.

Decline May Come — The current consensus definitely looks for lower levels of foreign trade than these to prevail during 1958. It is generally predicted that commercial exports will at best total no more than \$18.5 billion in 1958 which would mean a drop of around 5 pct. The actual prospect is for a somewhat greater decline even than this, say to somewhere around \$18 billion.

The outlook for commercial imports in 1958 is rather mixed, with both favorable and unfavorable factors present. The probability, however, is that imports will amount to between \$12½ and \$12¾ billion, which would mean a slight drop from the 1956 level.

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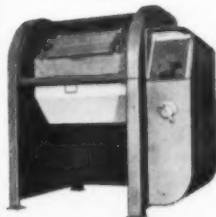
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barrel finishing
is much faster
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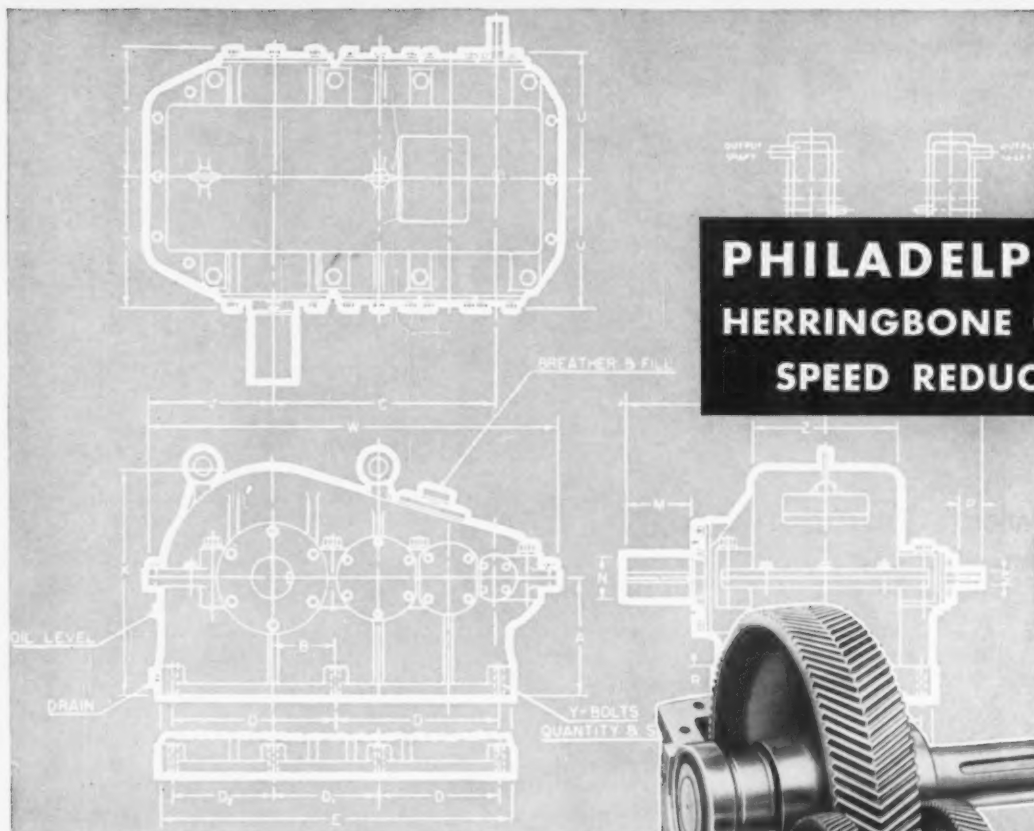
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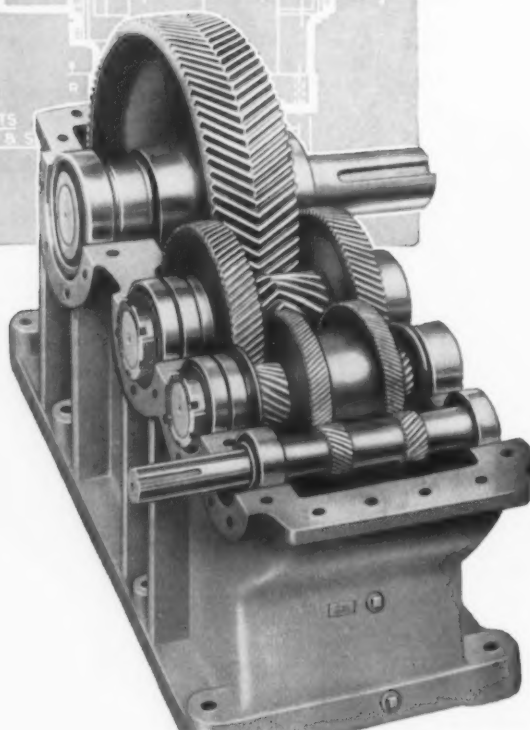
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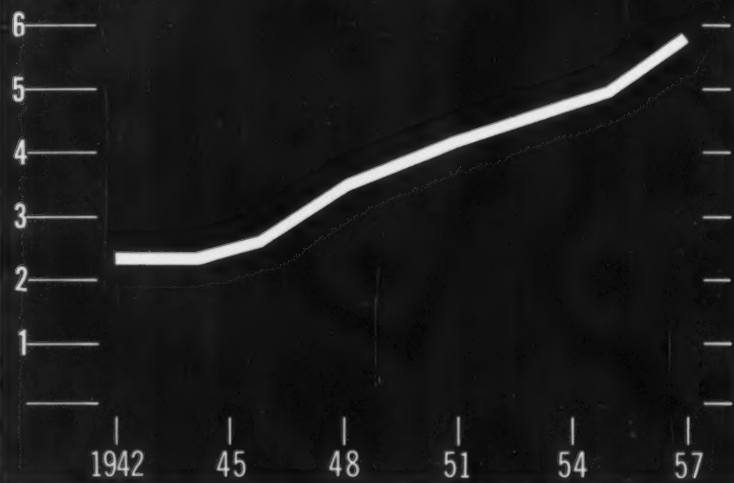
Steel Prices Production



FINISHED STEEL BASE PRICES

Cents per Pound

The Iron Age Composite



THE IRON AGE FINISHED STEEL COMPOSITE PRICE

Current Series, 1934 to 1957, Cents Per Pound

	1934	1935	1936	1937	1938	1939	1940*	1945*	1946	1947
Jan.	1.958	2.065	2.076	2.323	2.584	2.354	2.305	2.412	2.464	2.877
Feb.	1.958	2.065	2.065	2.323	2.581	2.354	2.305	2.427	2.555	2.884
Mar.	1.958	2.065	2.055	2.532	2.578	2.354	2.305	2.432	2.719	2.884
Apr.	2.007	2.065	2.062	2.584	2.578	2.354	2.267	2.433	2.719	2.884
May	2.154	2.065	2.062	2.584	2.580	2.308	2.305	2.436	2.719	2.884
June	2.154	2.065	2.067	2.584	2.513	2.283	2.305	2.464	2.719	2.884
July	2.107	2.065	2.139	2.584	2.359	2.283	2.305	2.464	2.719	2.914
Aug.	2.065	2.065	2.139	2.584	2.359	2.283	2.305	2.464	2.719	3.193
Sept.	2.065	2.065	1.146	2.584	2.357	2.283	2.305	2.464	2.719	3.193
Oct.	2.065	2.076	2.172	2.584	2.320	2.283	2.305	2.464	2.719	3.193
Nov.	2.065	2.076	2.172	2.584	2.354	2.305	2.305	2.464	2.719	3.193
Dec.	2.065	2.076	2.253	2.584	2.354	2.305	2.305	2.464	2.719	3.193
Average	2.051	2.068	2.118	2.536	2.459	2.311	2.302	2.449	2.686	3.014

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	3.193	3.720	3.837	4.131	4.131	4.376	4.634	4.797	5.174	5.622
Feb.	3.215	3.719	3.837	4.131	4.131	4.376	4.634	4.797	5.174	5.649
Mar.	3.241	3.715	3.837	4.131	4.131	4.376	4.634	4.797	5.179	5.666
Apr.	3.241	3.709	3.837	4.131	4.131	4.376	4.634	4.797	5.179	5.670
May	3.214	3.708	3.837	4.131	4.131	4.376	4.634	4.797	5.179	5.670
June	3.211	3.705	3.837	4.131	4.131	4.517	4.634	4.797	5.179	5.670
July	3.293	3.705	3.837	4.131	4.180	4.634	4.789	5.081	5.179	5.818
Aug.	3.720	3.705	3.837	4.131	4.376	4.634	4.801	5.174	5.560	5.967
Sept.	3.720	3.705	3.837	4.131	4.376	4.634	4.801	5.174	5.622	5.967
Oct.	3.720	3.705	3.837	4.131	4.376	4.634	4.798	5.174	5.622	5.967
Nov.	3.720	3.705	3.837	4.131	4.376	4.633	4.797	5.174	5.622	5.967
Dec.	3.720	3.756	4.131	4.131	4.376	4.633	4.797	5.174	5.622	5.967
Average	3.434	3.713	3.862	4.131	4.237	4.518	4.716	4.877	5.358	5.800

* 1941-1944 inclusive: 2.396.

THE IRON AGE finished steel composite price is a weighted average of the base prices of 10 major steel products which account for the majority of finished steel shipments. It is weighted by the percentage that each of these products is to total finished steel shipments during the base period. With the base constant, the only changes in the composite from 1929 through 1940 or from 1941 through 1949 occur when one or more steel products prices were changed.

In the composite shown here there are two base periods. For the years 1931 through 1940 the base is finished steel shipments for 1929-1939 inclusive. For 1941 through 1950 the base is finished steel shipments for the 7 years 1937 to 1940 inclusive and 1946 to 1948 inclusive. Two base periods are used because of basic changes in the shipment pattern in the 20 years covered. In each case the products remain the same. They are hot-rolled bars, structural shapes, plates, rails, pipe, wire and hot- and cold-rolled sheets and strip. To eliminate variations due to nonferrous metals price fluctuations, no coated products are included.

Details of latest revisions which appear in current series may be found in The Iron Age, May 12, 1940, p. 139. This reference also gives a comparison of current series with former series.

STEEL INDUSTRY OPERATING RATES

U. S. Openhearth, Bessemer and Electric Furnace Ingots and Steel for Castings—Percent of Capacity

	1939	1940	1941	1942	1943	1944		1945	1946	1947	1948	1949	1950		1951	1952	1953	1954	1955	1956	1957
Jan.	52.69	63.40	96.90	94.50	96.80	95.70	Jan.	88.80	49.80	93.20	93.60	100.4	94.0	Jan.	99.9	99.3	99.1	75.3	82.7	98.3	97.1
Feb.	54.93	70.00	96.60	95.90	98.50	97.00	Feb.	90.80	19.80	91.90	93.00	101.8	89.2	Feb.	97.2	100.7	99.1	74.3	88.0	99.2	97.6
Mar.	56.52	63.50	96.70	96.20	100.00	98.60	Mar.	95.00	83.30	94.40	95.30	102.9	88.8	Mar.	102.5	102.2	101.8	69.0	93.4	100.2	93.4
Apr.	50.97	61.20	97.60	97.70	96.30	98.80	Apr.	92.80	77.50	93.90	80.40	98.6	100.6	Apr.	103.1	98.7	98.7	68.1	94.8	99.7	89.5
May	48.51	71.80	96.70	96.10	96.40	97.10	May	91.80	52.20	94.70	94.80	93.0	101.4	May	102.8	99.2	100.1	70.7	96.6	96.2	86.4
June	53.57	84.50	96.20	96.30	94.50	94.10	June	87.10	74.40	92.90	93.50	82.2	99.6	June	101.0	104.4	97.2	72.0	94.1	92.1	85.6
July	52.60	83.00	93.40	94.50	95.20	94.30	July	86.30	84.00	85.10	88.70	71.6	94.8	July	98.3	17.7	93.1	62.9	85.3	14.9	76.6
Aug.	62.45	89.50	95.70	95.40	98.30	94.10	Aug.	70.70	86.90	92.20	93.10	82.3	96.5	Aug.	98.7	92.4	94.2	63.1	89.7	74.5	81.5
Sept.	72.58	90.60	96.40	96.40	100.70	94.00	Sept.	76.30	85.90	90.80	96.10	83.6	99.4	Sept.	101.2	101.9	92.1	66.7	93.7	96.8	81.8
Oct.	88.52	96.10	99.00	100.00	101.20	95.80	Oct.	69.00	89.00	97.70	99.90	11.4	102.4	Oct.	103.0	106.6	94.7	72.9	98.2	101.3	81.1
Nov.	93.46	96.60	96.30	97.80	96.60	94.30	Nov.	78.90	85.40	96.50	100.50	53.4	97.0	Nov.	102.6	105.9	89.9	79.1	99.0	100.0	76.5†
Dec.	83.91	94.10	96.10	96.60	94.20	92.60	Dec.	74.80	73.90	86.40	87.70	94.8	98.0	Dec.	100.6	103.6	79.7	78.6	98.6	99.4	72.0*
Average	64.53	82.10	97.40	96.60	98.10	95.50	Average	83.50	72.50	93.00	94.10	81.1	96.9	Average	100.9	85.8	94.9	71.0	93.0	89.8	85.0*

* Estimate. † Preliminary

Source: American Iron and Steel Institute.

Openhearth, bessemer and electric furnace steel capacity, production and operating rates . . . Canadian output, capacity.

STEEL INDUSTRY

COMPOSITE PRICE BY PERIODS

Period	Cents per Pound
Mar. 15, 1949 to Mar. 28, 1949	3.714
Mar. 29, 1949 to Apr. 11, 1949	3.711
Apr. 12, 1949 to May 2, 1949	3.708
May 3, 1949 to Dec. 21, 1949	3.705
Dec. 22, 1949 to Dec. 28, 1949	3.836
Dec. 29, 1949 to Dec. 4, 1950	3.837
Dec. 5, 1950 to July 25, 1952	4.131
July 26, 1952 to May 8, 1953	4.376
May 9, 1953 to May 21, 1953	4.390
May 22, 1953 to June 16, 1953	4.417
June 17, 1953 to Nov. 14, 1953	4.634
Nov. 15, 1953 to Dec. 15, 1953	4.632
Dec. 16, 1953 to June 30, 1954	4.634
July 1, 1954 to July 2, 1954	4.635
July 3, 1954 to July 5, 1954	4.791
July 6, 1954 to Oct. 3, 1954	4.801
Oct. 4, 1954 to Nov. 9, 1954	4.788
Nov. 10, 1954 to July 11, 1955	4.797
July 12, 1955 to July 18, 1955	5.178
July 19, 1955 to July 25, 1955	5.176
July 26, 1955 to March 19, 1956	5.174
Mar. 20, 1956 to Aug. 6, 1956	5.179
Aug. 7, 1956 to Aug. 13, 1956	5.374
Aug. 14, 1956 to Feb. 11, 1957	5.622
Feb. 12, 1957 to Feb. 18, 1957	5.650
Feb. 19, 1957 to July 18, 1957	5.651
Feb. 26, 1957 to March 4, 1957	5.663
March 5, 1957 to July 8, 1957	5.670
July 9, 1957 to Dec. 31, 1957	5.967

CANADIAN STEEL OUTPUT

Ingots and Steel for Castings, Net Tons

	Ingots	Castings	Total Steel Ingots and Castings
1930	1,072,321	60,830	1,133,151
1931	744,605	41,501	786,106
1932	349,843	25,684	375,527
1933	441,346	17,830	459,176
1934	827,041	23,116	850,157
1935	1,016,814	35,123	1,051,937
1936	1,211,334	38,337	1,249,671
1937	1,496,575	74,652	1,571,227
1938	1,238,078	56,636	1,294,714
1939	1,266,056	60,997	1,327,053
1940	2,177,973	77,899	2,255,872
1941	2,578,063	123,250	2,701,313
1942	2,942,921	178,440	3,121,361
1943	2,848,235	148,743	2,996,978
1944	2,878,407	146,003	3,024,410
1945	2,747,206	134,117	2,881,323
1946	2,253,437	81,194	2,334,631
1947	2,854,532	90,634	2,945,166
1948	3,089,027	112,829	3,201,856
1949	3,089,368	97,562	3,186,930
1950	3,298,068	86,063	3,384,131
1951	3,446,125	121,236	3,567,361
1952	3,578,106	122,037	3,700,143
1953	4,009,813	105,656	4,115,469
1954	4,441,743	87,658	4,529,401
1955	5,185,227	120,578	5,305,805
1956	5,162,000	116,400	5,278,400

* Estimated. Source: Dominion Bureau of Statistics

CANADA STEEL CAPACITY

Ingot Capacity and Operating Rates

	Steel Ingot Capacity	Steel Ingot Output	Percent of Capacity
1939	2,346,000	1,266,056	53.9
1940	2,687,000	2,177,973	81.6
1941	2,864,000	2,578,063	90.9
1942	3,172,000	2,942,921	92.7
1943	3,257,500	2,848,235	87.4
1944	3,338,200	2,878,407	86.2
1945	3,358,600	2,787,206	81.7
1946	3,358,600	2,253,437	67.0
1947	3,245,000	2,854,532	87.9
1948	3,490,000	3,089,027	88.5
1949	3,580,000	3,089,368	86.1
1950	3,672,500	3,298,068	89.8
1951	3,830,900	3,446,125	90.9
1952	3,830,900	3,578,106	93.1
1953	4,302,800	4,009,813	93.1
1954	4,657,500	4,441,743	95.6
1955	4,883,000	5,185,227	106.4
1956	5,504,000	5,162,000	93.7

* Estimated.

STEEL CAPACITY, PRODUCTION AND RATES

Ingots and Steel for Castings, Net Tons

	Total Capacity	Openhearth		Bessemer		Electric*		Total	
		Production	Percent of Total Output	Production	Percent of Total Output	Production	Percent of Total Output	Production	Percent of Total Output
1957†	133,459,150	101,314,000	89.5	3,056,000	2.7	8,630,000	7.8	113,200,000	85.0
1956	128,363,090	102,840,585	89.2	3,227,997	2.8	9,147,567	8.0	115,216,149	89.8
1955	125,828,310	105,359,417	90.0	3,319,517	2.8	8,357,151	7.2	117,036,085	93.0
1954	124,330,410	80,327,494	91.0	2,548,104	2.9	5,436,054	6.1	88,311,652	71.0
1953	117,547,470	100,473,823	90.0	3,855,705	3.5	7,280,191	6.5	111,609,719	94.9
1952	108,587,670	82,846,439	88.9	3,523,677	3.3	6,797,923	7.3	93,168,039	85.8
1951	104,229,650	83,166,518	88.6	4,890,946	4.6	7,142,384	6.8	105,199,848	100.9
1950	99,982,650	86,262,509	89.1	4,534,558	4.7	6,039,008	6.2	96,836,075	96.9
1949	96,120,930	70,248,803	90.1	3,948,656	5.1	3,782,717	4.8	77,978,176	81.1
1948	94,243,460	79,340,157	99.5	4,243,172	4.8	5,057,141	5.7	88,640,470	94.1
1947	91,241,250	76,873,793	90.5	4,232,543	5.0	3,787,785	4.5	84,894,071	93.0
1946	81,890,560	60,711,963	91.2	3,327,737	5.0	2,563,024	3.8	66,602,724	72.5
1945	95,505,280	71,939,802	90.3	4,305,318	5.4	3,456,728	4.3	79,701,648	83.5
1944	93,854,420	80,363,953	89.7	5,039,923	5.6	4,237,724	4.7	89,641,600	95.5
1943	90,598,190	78,621,604	88.5	5,625,432	6.3	4,589,216	5.2	88,836,512	98.1
1942	88,886,550	76,501,957	88.9	5,553,424	6.5	3,976,550	4.6	86,031,931	96.8
1941	85,156,150	74,389,619	89.8	5,578,071	6.7	2,871,569	3.5	82,839,259	97.3
1940	81,619,496	61,573,063	91.9	3,706,573	5.6	1,701,030	2.5	66,982,666	82.1
1939	81,828,958	48,409,800	91.7	3,358,916	6.4	1,029,998	1.9	52,798,714	64.5
1938	80,158,636	29,080,016	91.6	2,106,340	6.6	565,634	1.8	31,751,990	39.6
1937	78,148,374	51,624,979	91.5	3,863,918	6.8	948,048	1.7	56,636,945	72.5
1936	78,184,300	48,760,463	91.2	3,873,472	7.2	866,064	1.6	53,499,999	68.4
1935	78,451,930	34,401,280	90.1	3,175,235	8.3	607,190	1.6	38,163,705	48.7
1934	78,126,416	26,354,838	90.3	2,421,840	8.3	405,246	1.4	29,181,924	37.4
1933	78,614,403	22,827,473	87.7	2,720,248	10.5	472,510	1.8	26,020,229	33.1
1932	78,790,913	13,336,210	87.0	1,715,925	11.2	270,766	1.8	15,322,901	19.5
1931	77,257,803	25,210,714	86.8	3,386,259	11.6	461,968	1.6	29,058,961	37.6
1930	72,895,406	39,255,073	86.1	5,639,714	12.4	688,634	1.5	45,583,421	62.5
1929	71,436,516	54,155,235	85.7	7,977,210	12.6	1,073,045	1.7	63,205,490	88.5
1928	68,840,912	49,407,631	85.6	7,414,618	12.0	907,232	1.6	57,729,481	83.9

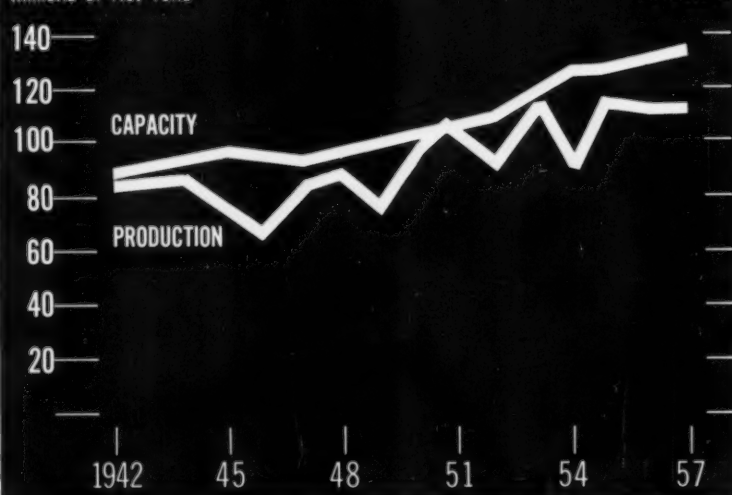
* Includes very small tonnages of crucible steel.

† IRON AGE Estimate.
Source: American Iron & Steel Institute

STEEL PRODUCTION AND CAPACITY, U.S.A.

Millions of Net Tons

1957 - Iron Age Estimate



STEEL INDUSTRY

Monthly data on U.S. production of openhearth, bessemer and electric furnace ingots . . . Round-up of world steel output.

WORLD STEEL PRODUCTION

Ingot and Steel for Castings, Thousands of Net Tons
Compiled by THE IRON AGE from the United Nations Bulletin of Statistics, Chambre Syndicate de la Siderurgie Francaise, British Iron and Steel Federation and the American Iron and Steel Institute.

	1957*	1956†	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
Australia	3,400	2,914	2,480	2,117	2,296	1,835	1,606	1,596	1,328	1,425	1,373	1,164
Austria	2,700	2,290	2,009	1,822	1,427	1,165	1,133	1,044	920	713	394	207
Belgium	6,900	7,028	6,403	5,522	4,997	5,621	5,590	4,155	4,242	4,318	3,181	2,508
Brazil	1,600	1,504	1,286	1,288	1,109	985	930	834	677	545	426	379
Canada	5,300	5,306	4,529	3,192	4,110	3,703	3,567	3,384	3,188	3,159	2,902	2,283
China	5,500	5,024	3,142	2,397	1,150							
Czechoslovakia	5,600	5,382	5,401	4,884	4,883	3,944	3,651	3,190	2,756	2,910	2,520	1,843
France	15,200	14,770	13,880	11,319	11,023	11,979	10,842	9,537	10,086	7,984	6,338	4,859
Germany West	26,600	25,561	23,518	19,221	16,997	17,423	14,888	13,361 ²	10,090 ²	6,127 ²	4,739 ²	3,604 ²
Germany East	3,200	3,020	2,758	2,486	2,666	2,067	1,711					
Hungary	1,500	1,571	1,764	1,844	1,853	1,539	1,360	1,100	882	794	658	389
India	1,900	1,947	1,908	1,882	1,691	1,768	1,680	1,610	1,517	1,237	1,348	1,373
Italy	7,300	6,512	5,947	4,638	3,858	3,897	3,362	2,583	2,265	2,342	1,874	1,269
Japan	15,200	12,243	10,370	8,523	8,445	7,703	7,167	5,332	3,352	1,916	1,041	608
Luxembourg	3,900	3,809	3,555	3,118	2,931	3,309	3,391	2,702	2,507	2,705	1,888	1,426
Mexico	700	648	579	515	504	561	500	390	380	268	353	277
Netherlands	1,300	1,159	1,074	1,023	948	755	609					
Poland	5,900	5,527	4,894	4,370	3,965	3,509	3,078	2,750	2,539	2,116	1,731	1,344
Rumania	1,100	862	843	693	793	769	720					
Saar	3,800	3,719	3,849	3,083	2,959	3,112	2,869	2,092	1,936	1,922	700	317
South Africa	1,800	1,708	1,681	1,523	1,386	1,326	1,045	830	699	750	680	568
Spain	1,500	1,370	1,337	1,209	985	1,000	902	900	793	604	581	556
Sweden	2,700	2,646	2,342	2,052	1,969	1,836	1,658	1,587	1,511	1,270	1,311	1,335
U. Kingdom	24,300	23,138	22,166	20,742	19,723	18,388	17,516	18,240	17,256	16,662	12,246	14,220
U. S. S. R.	56,000	54,443	49,936	45,203	41,800	36,029	34,500	29,800	23,600	18,700	14,700	13,400
United States	113,200	115,216	117,036	88,312	111,610	93,168	105,200	96,836	77,978	86,894	84,694	66,603
Yugoslavia	1,400	877	809	679	568	488	470					
Others	2,600	2,360	1,816	1,546	2,280	1,524						
Totals	322,100	312,654	297,011	245,013	258,706	229,423	229,945	204,348	173,386	167,107	147,156	120,345

* Estimated. † Revised. ² British, French and United States Zones.

WORLD STEEL DATA

Data in the table at left are based on an extensive Iron Age study. Assisting in the study were the Intelligence Dept. of the British Iron & Steel Federation, Chambre Syndicate de la Siderurgie Francaise, United Nations, American Iron and Steel Institute and Iron Age correspondents throughout the world. Though based on the best available intelligence, the accuracy of Iron Curtain steel data is naturally not of the same order as that of the free world.

U. S. MONTHLY STEEL INGOT PRODUCTION

Openhearth, Bessemer and Electric Furnace Ingots and Steel for Castings, Net Tons; U. S. Only

	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
Jan.	1,685,665	1,157,745	2,276,596	3,279,473	3,474,353	5,398,326	1,984,815	3,683,004	5,764,723	6,928,083	7,112,106	7,424,522	7,582,603
Feb.	1,681,421	1,221,664	2,521,477	3,169,909	3,378,587	5,050,824	1,942,795	3,448,120	4,525,797	6,237,800	6,512,535	6,824,604	7,194,008
March	1,527,030	1,022,678	3,190,040	3,273,910	3,610,436	5,970,247	2,293,884	3,929,367	4,389,163	7,131,641	7,392,111	7,674,576	7,826,257
April	1,429,848	1,531,813	3,346,922	3,017,177	4,494,782	5,801,540	2,196,413	3,431,600	4,100,474	6,756,949	7,121,291	7,373,703	7,593,688
May	1,277,302	2,250,236	3,875,202	3,006,425	4,614,529	5,894,280	2,861,189	3,372,638	4,967,782	7,083,238	7,382,578	7,549,691	7,702,576
June	1,036,102	2,919,687	4,887,612	2,580,771	4,543,888	4,787,710	1,868,848	3,606,729	5,657,443	6,800,730	7,015,302	7,039,353	7,234,257
July	915,738	3,607,288	1,697,879	2,591,240	4,473,940	5,212,832	2,259,677	3,648,639	5,724,625	6,821,682	7,144,958	7,407,876	7,648,367
Aug.	961,163	3,260,278	1,574,649	2,331,770	4,782,442	5,580,683	2,903,805	4,341,728	6,188,383	7,000,957	7,227,655	7,588,464	7,498,913
Sept.	1,125,892	2,999,370	1,446,551	3,227,676	4,748,841	4,907,592	3,029,735	4,891,601	6,056,246	6,819,246	7,057,519	7,514,338	7,235,111
Oct.	1,233,957	2,373,729	1,899,272	3,590,945	5,182,430	3,861,619	3,554,912	6,223,128	6,644,542	7,242,883	7,579,514	7,614,117	7,620,685
Nov.	1,171,710	1,731,930	1,836,068	3,589,687	4,941,014	2,464,793	4,072,676	6,292,322	6,468,107	9,968,987	7,179,812	7,371,975	7,278,719
Dec.	977,389	2,047,780	2,239,126	3,511,702	5,056,843	1,685,273	3,751,253	5,958,893	6,495,357	7,163,999	7,304,540	7,256,144	7,336,170
Total	5,123,207	25,724,196	29,181,329	38,183,705	53,446,005	56,835,899	31,751,983	52,797,763	66,981,662	82,927,567	86,029,921	88,836,366	89,641,575
1945	7,204,312	3,072,887	7,222,612	7,480,876	8,187,390	7,941,797	8,848,466	9,136,117	9,897,962	7,951,486	8,637,736	10,828,231	11,008,762
Feb.	6,652,765	1,392,682	6,430,401	6,949,017	7,493,942	6,803,032	7,770,407	8,657,210	9,932,779	7,063,237	8,496,934	10,118,995	9,987,206
March	7,705,929	6,508,784	7,318,974	7,616,770	8,401,796	7,497,622	7,076,530	9,404,191	10,166,096	7,288,600	9,981,754	10,924,786	10,589,074
April	2,289,887	5,801,195	7,051,842	6,224,487	7,796,165	8,224,504	8,845,979	7,991,142	9,545,538	6,970,937	9,815,095	10,536,121	9,814,780
May	7,448,667	4,072,620	7,339,014	7,580,642	7,598,980	8,564,207	9,100,155	6,204,596	9,997,080	7,472,738	10,328,316	10,490,376	9,792,323
June	6,840,522	5,625,773	6,977,714	7,265,249	6,504,656	8,143,230	8,662,348	1,639,491	9,404,479	7,363,834	9,746,467	9,721,436	9,391,402
July	6,985,571	6,616,983	6,578,686	7,075,517	5,784,831	8,082,922	8,684,495	1,626,958	9,275,673	6,627,587	9,100,946	1,622,163	8,908,732
Aug.	5,736,317	6,924,522	6,991,152	7,446,834	6,722,771	8,242,174	8,739,096	4,988,687	9,405,580	6,666,907	9,594,545	8,122,597	9,233,690
Sept.	5,982,475	6,555,566	6,797,457	7,424,844	5,997,935	8,204,997	8,660,357	9,062,105	8,683,426	5,807,163	9,882,325	10,422,659	9,977,906
Oct.	5,596,776	6,951,742	7,570,152	7,996,895	928,347	8,752,686	9,121,886	8,806,830	9,482,722	7,701,553	10,501,050	11,048,513	9,187,717
Nov.	6,200,466	6,457,771	7,242,427	7,797,558	4,223,129	8,023,383	8,799,352	9,438,888	8,690,052	8,089,427	10,247,398	10,555,500	10,393,000
Dec.	6,057,937	5,760,501	7,375,641	7,789,779	7,728,224	8,355,311	8,890,676	9,680,162	8,746,328	8,287,073	10,503,519	10,637,545	8,020,000
Total	79,701,624	68,802,706	84,894,071	88,640,470	77,978,176	96,836,075	105,199,846	93,153,375	111,609,719	88,311,652	117,036,085	115,216,149	113,200,000

* Estimate. † Preliminary.

Source: American Iron and Steel Institute.

Financial analysis of steel industry . . . Twenty-eight steel producers covered represent 93 per cent of U.S. ingot capacity.

STEEL INDUSTRY

FINANCIAL ANALYSIS OF THE STEEL INDUSTRY

For years 1951 through 1956. Data Cover 28 Companies Representing 93 Pct of U. S. Ingot Capacity

COMPANY	Year	Ingot Capacity Net Tons	Ingot Production Net Tons	Percent of Capacity Operated	Steel Shipments Net Tons	Net Sales and Operating Revenue	Provision for Federal Income Taxes	Net Income	Net Income Percent of Sales	Earnings Per Common Share	Invested Capital
U. S. Steel Corp.	1956	39,582,000	33,402,000	85.2	23,911,000	\$4,226,877,241	\$331,000,000	\$348,098,916	8.2	\$6.01	\$3,008,995,483
	1955	38,877,000	35,309,000	90.8	25,506,000	4,097,680,267	366,000,000	370,099,353	9.0	6.44	2,885,855,585
	1954	38,715,000	28,355,000	73.2	20,239,000	3,280,369,279	190,000,000	195,417,611	6.0	6.46	2,872,832,918
	1953	36,399,000	35,827,000	96.4	25,091,000	3,861,034,728	323,000,000	222,087,840	5.8	7.54	2,319,132,239
	1952	34,612,000	29,436,000	85.0	21,133,000	3,137,397,336	117,000,000	143,687,746	4.6	4.54	2,197,124,774
Bethlehem Steel Corp.	1956	20,000,000	18,322,308	91.6	13,196,783	2,343,478,150	147,000,000	161,411,625	6.9	15.33	1,608,356,409
	1955	19,100,000	18,820,912	98.5	13,553,823	2,114,599,636	181,000,000	180,191,708	8.5	18.09	1,522,975,405
	1954	18,500,000	13,810,076	74.6	10,226,752	1,667,377,179	119,000,000	132,837,154	8.0	13.18	1,232,094,615
	1953	17,600,000	17,662,687	100.4	12,712,994	2,094,952,155	161,000,000	133,947,837	6.4	13.30	1,163,636,586
	1952	16,800,000	14,116,342	84.0	10,290,587	1,701,541,383	66,000,000	90,900,771	5.3	8.80	1,217,957,726
Republic Steel Corp.	1956	10,202,000	9,348,898	91.1	6,783,307	1,244,214,348	94,700,000	90,406,665	7.3	5.83	698,248,994
	1955	10,262,000	9,680,121	97.1	6,888,782	1,188,559,765	84,000,000	88,271,491	7.3	5.59	650,126,815
	1954	10,262,000	6,972,812	69.8	5,012,330	846,310,670	49,900,000	52,875,164	6.2	7.10	629,318,251
	1953	10,262,000	9,630,454	94.5	7,135,745	1,137,123,547	100,500,000	56,743,547	5.0	9.25	620,878,235
	1952	10,262,000	7,991,238	82.8	6,025,990	918,447,135	42,600,000	44,274,053	4.8	7.21	606,379,373
Jones & Laughlin Steel Corp.	1956	6,166,500	5,997,000	97.0	4,341,000	742,642,000	39,380,000	45,122,000	6.1	6.63	591,426,000
	1955	6,166,500	6,190,000	100.0	4,419,000	696,538,000	46,500,000	50,104,000	7.2	7.73	526,212,000
	1954	6,166,500	4,570,000	74.0	3,203,000	492,941,000	22,543,000	25,032,000	5.1	3.80	497,439,000
	1953	6,166,500	6,033,000	96.0	4,278,000	624,387,000	27,900,000	31,015,000	5.0	4.77	492,373,000
	1952	5,900,000	4,710,000	83.0	3,332,000	495,401,000	5,858,090	19,482,000	3.9	2.91	499,596,000
National Steel Corp.	1956	6,000,000	6,000,000	100.0	4,419,000	664,251,090	47,000,000	52,502,422	7.9	7.09	532,312,345
	1955	6,000,000	6,000,000	100.0	4,419,000	622,018,919	48,275,000	48,269,453	7.8	6.54	452,911,987
	1954	6,000,000	4,570,000	76.0	3,203,000	484,058,380	27,750,000	30,334,871	6.3	4.12	427,082,106
	1953	5,650,000	5,650,000	100.0	4,419,000	634,178,060	69,325,000	50,334,130	7.9	6.84	418,230,307
	1952	5,100,000	4,710,000	92.4	3,332,000	548,628,617	42,000,000	37,559,477	6.9	5.10	385,035,319
Youngstown Sheet & Tube Co.	1956	5,750,000	5,406,016	94.0	3,839,224	684,041,021	37,329,000	43,174,587	6.31	12.62	498,364,512
	1955	5,520,000	5,571,556	100.9	3,944,492	626,232,840	41,867,500	41,701,140	6.8	12.34	462,890,771
	1954	5,520,000	3,888,525	70.1	2,606,540	433,406,272	12,104,000	20,182,500	4.7	6.02	432,764,332
	1953	4,947,500	5,091,876	102.9	3,675,229	554,059,088	27,900,000	30,839,716	5.6	9.21	424,083,129
	1952	4,370,000	3,937,490	90.1	2,867,500	439,623,163	16,890,000	22,915,822	5.3	6.84	399,815,973
Inland Steel Co.	1956	5,200,000	4,915,576	94.5	3,852,719	731,767,767	55,142,000	52,998,726	7.3	9.43	497,757,696
	1955	5,150,000	5,189,599	100.8	3,954,567	663,317,374	53,050,000	52,466,098	8.0	9.52	416,415,101
	1954	4,700,000	4,522,257	96.2	3,392,658	537,024,479	37,930,000	41,287,152	7.7	7.92	287,259,955
	1953	4,560,000	4,513,076	100.3	3,712,000	579,509,058	39,379,000	33,867,184	5.9	6.90	344,188,324
	1952	3,750,000	3,307,253	88.2	3,307,253	460,451,935	13,117,000	23,755,218	5.2	4.85	337,631,507
Armco Steel Corp.	1956	5,150,000	5,220,147	101.4	3,936,105	761,800,102	83,290,322	65,593,182	8.61	6.03	480,309,799
	1955	4,950,000	5,099,905	103.0	4,003,532	692,683,234	86,613,787	64,350,609	9.3	6.05	444,015,755
	1954	4,902,000	4,448,772	90.8	3,171,401	532,045,314	42,522,317	41,100,266	7.7	7.86	403,749,452
	1953	4,718,000	4,704,773	99.7	3,375,630	588,919,900	50,788,608	33,902,462	5.8	6.50	388,931,246
	1952	4,525,000	4,042,473	89.3	3,078,639	518,575,218	43,095,226	31,337,861	6.0	6.01	375,908,210
Colorado Fuel & Iron Corp.	1956	2,471,500	2,401,231	97.16	2,134,480	341,639,224	16,891,800	16,662,653	4.9	4.74	189,184,650
	1955	2,471,500	1,936,402	78.35	1,627,887	257,543,050	10,681,800	10,881,163	4.2	3.79	170,325,365
	1954	2,469,035	1,845,693	74.8	1,667,960	250,235,696	6,125,000	7,051,729	2.8	2.46	167,132,675
	1953	2,311,785	2,130,451	92.2	1,948,414	248,835,574	14,572,400	8,031,224	3.2	3.09	166,459,029
	1952	2,024,000	1,892,485	93.5	1,575,987	195,757,164	8,461,500	5,761,965	2.9	2.64	133,736,055
Whelan Steel Corp.	1956	2,130,000	1,994,745	93.7	1,627,887	257,543,050	16,891,800	16,662,653	4.9	4.74	189,184,650
	1955	2,130,000	2,057,288	96.6	1,627,887	257,543,050	16,891,800	16,662,653	4.9	4.74	189,184,650
	1954	2,130,000	1,569,643	73.7	1,144,488	168,268,508	7,240,000	5,120,414	3.9	4.65	88,016,840
	1953	1,860,000	1,797,419	96.6	1,444,488	168,268,508	7,240,000	5,120,414	3.9	4.65	88,016,840
	1952	1,860,000	1,464,885	78.8	1,144,488	168,268,508	7,240,000	5,120,414	3.9	4.65	88,016,840
Sharon Steel Corp.	1956	1,763,000	1,508,660	85.6	1,126,612	180,044,408	6,473,000	6,905,539	3.8	6.28	82,716,190
	1955	1,550,000	1,528,686	98.6	1,092,593	173,095,949	7,840,000	7,987,622	4.6	7.26	73,098,951
	1954	1,550,000	846,515	54.6	611,668	99,347,910	1,865,000	3,134,864	3.2	2.85	68,711,329
	1953	1,550,000	1,527,706	98.6	1,144,488	168,268,508	7,240,000	5,120,414	3.9	4.65	88,016,840
	1952	1,550,000	1,284,170	82.8	944,893	132,376,426	2,750,000	5,120,414	3.9	4.65	88,016,840
Kaiser Steel Corp.	1956	1,536,000	1,617,621	105.3	1,140,776	201,488,824	12,055,000	23,571,852	11.7	6.57	245,177,553
	1955	1,536,000	1,422,742	93.3	929,556	136,148,919	5,471,236	17,285,711	12.6	1.08	245,329,442
	1954	1,536,000	1,382,877	90.0	933,843	128,491,032	3,325,000	7,926,666	6.2	1.75	245,984,849
	1953	1,536,000	1,458,904	100.1	951,897	134,500,041	9,700,000	9,121,284	6.0	2.12	240,847,614
	1952	1,380,000	1,381,862	100.1	941,108	117,925,409	9,900,000	10,399,306	8.8	2.52	208,125,843
Crucible Steel Co. of America	1956	1,423,400	1,423,400	100.0	1,077,610	179,133,961	3,404,000	6,225,000	3.49	3.24	125,912,965
	1955	1,351,400	1,222,176	90.4	1,132,437	177,707,556	4,372,000	7,515,470	4.3	4.31	118,387,226
	1954	1,351,400	1,077,386	79.7	784,420	124,469,419	973,000	2,170,694	1.8	8.2	116,365,912
	1953	1,351,400	1,037,335	86.4	1,009,511	141,471,302	5,310,000	4,648,195	3.3	2.61	114,525,876
	1952	1,350,700	971,029	85.3	958,829	130,158,219	4,437,000	5,150,034	4.0	3.25	104,203,194
Pittsburgh Steel Co.	1956	1,320,000	1,139,862	86.4	1,077,610	179,133,961	3,404,000	6,225,000	3.49	3.24	125,912,965
	1955	1,320,000	1,303,503	98.8	1,132,437	177,707,556	4,372,000	7,515,470	4.3	4.31	118,387,226
	1954	1,320,000	1,077,386	79.7	784,420	124,469,419	973,000	2,170,694	1.8	8.2	116,365,912
	1953	1,404,000	1,037,335	86.4	1,009,511	141,471,302	5,310,000	4,648,195	3.3	2.61	114,525,876
	1952	1,152,000	971,029	85.3	958,829	130,158,219	4,437,000	5,150,034	4.0	3.25	104,203,194
Barium Steel Corp.	1956	893,000	732,600	82.0	583,000	119,536,637	8,118,951	7,009,956	5.86	1.98	37,808,634
	1955	893,000	520,900	58.3	583,000	75,084,700	995,255	655,319	.9	.20	22,822,682
	1954	893,000	237,000	26.5	583,000	53,484,604	1,772,500	441,212	0.8	.14	22,222,682
	1953	893,000	487,790	54.7	583,000	89,719,175	3,849,840	2,321,140	2.6	1.01	21,097,017
	1952	893,000	690,128	77.3	583,000	99,052,028	6,966,295	2,746,050	2.8	1.22	19,588,716

STEEL INDUSTRY

Financial analysis of steel industry showing capacity, sales earnings data, shipments, production, etc., by company.

FINANCIAL ANALYSIS (Continued)

COMPANY	Year	Input Capacity Net Tons	Input Production Net Tons	Percent of Capacity Operated	Steel Shipments Net Tons	Net Sales and Operating Revenue	Provision for Federal Income Taxes	Net Income	Net Income Percent of Sales	Earnings Per Common Share	Invested Capital
Allegheny Ludlum Steel Corp.	1956	864,200	866,918	77.2	453,822	\$287,078,052	\$18,867,000	\$15,261,090	5.32	4.04	\$140,683,981
	1955	864,200	863,195	79.1	464,231	255,587,054	16,554,000	14,985,660	5.9	8.25	121,125,921
	1954	864,200	431,068	49.9	305,208	170,056,405	4,459,000	4,246,083	2.5	2.30	80,073,450
	1953	864,200	690,819	78.8	537,341	242,091,546	11,670,000	7,791,287	3.2	4.40	79,561,980
	1952	899,200	569,921	64.1	467,638	190,091,185	2,900,000	5,940,324	3.1	3.37	75,439,053
Northwestern Steel & Wire Co.	1956	825,000	692,326	81.9	585,816	74,157,804	5,760,000	5,076,959	6.8	2.07	32,971,850
	1955	825,000	502,443	60.9	391,675	51,403,405	4,610,000	4,131,969	5.0	5.05	29,585,467
	1954	825,000	308,780	37.4	246,170	35,628,171	1,065,000	1,018,754	2.9	1.25	17,127,634
	1953	825,000	361,550	43.8	336,056	44,291,906	485,000	303,163	.7	.37	15,838,880
	1952	573,000	313,656	63.9	276,023	34,028,721	645,000	1,830,601	5.4	2.24	15,535,717
Granite City Steel Co.	1956	1,080,000	1,151,620	107.0	1,057,932	137,131,233	15,800,000	15,109,411	11.0	7.04	113,844,812
	1955	1,080,000	1,091,389	101.0	961,101	116,293,657	13,703,700	12,610,820	11.0	6.05	102,438,312
	1954	1,080,000	634,909	58.8	559,112	69,265,197	4,400,700	4,012,192	5.8	2.04	90,232,973
	1953	720,000	937,801	130.3	805,455	87,856,006	6,953,500	6,488,452	7.4	3.77	90,878,115
	1952	720,000	621,574	86.3	698,767	74,587,639	3,917,000	4,985,954	6.7	3.17	82,948,433
Lukens Steel Co.	1956	750,000	703,434	93.8	512,735	105,173,925	7,675,000	7,504,889	7.1	23.60	39,593,684
	1955	750,000	691,444	92.2	490,569	79,307,372	2,400,000	1,731,238	2.2	5.44	34,334,613
	1954	675,000	631,834	93.6	455,153	74,954,710	2,065,000	2,014,791	2.7	5.33	33,589,833
	1953	675,000	763,879	113.2	599,635	87,850,937	9,325,000	3,697,713	3.7	11.35	30,675,958
	1952	675,000	555,102	82.2	403,771	69,616,358	3,631,165	2,316,791	3.3	7.29	29,637,411
Detroit Steel Corp.	1956	1,290,000	1,032,237	80.0	909,261	123,616,057	9,015,000	8,747,062	7.1	2.78	87,896,369
	1955	1,290,000	888,443	68.9	787,788	101,303,010	6,715,966	6,317,860	6.2	2.07	85,893,120
	1954	690,000	442,753	67.1	371,081	51,688,444	71,338	1,182,529	2.3	.49	40,268,465
	1953	690,000	529,044	80.2	583,421	93,391,509	6,612,624	5,230,259	5.6	2.16	39,082,957
	1952	660,000	529,432	80.2	609,437	87,421,483	4,673,235	4,276,666	4.9	1.80	35,831,387
Alan Wood Steel Co.	1956	625,000	713,859	109.1	495,098	69,330,353	2,024,000	3,095,727	4.5	4.04	36,853,835
	1955	625,000	565,906	106.5	462,046	58,375,609	1,619,000	2,551,530	4.4	3.32	35,951,285
	1954	625,000	345,918	55.3	241,268	36,085,476	216,000	1,045,251	3.4	1.42	36,547,492
	1953	675,000	595,334	88.2	442,537	59,756,645	2,457,000	3,213,590	5.4	4.63	31,561,852
	1952	625,000	658,449	105.4	473,963	60,479,849	2,475,000	2,251,073	3.7	3.17	30,122,636
Copperweld Steel Co.	1956	660,000	618,380	93.8	495,098	100,541,926	4,220,000	3,440,872	3.4	4.08	40,267,983
	1955	618,380	618,380	93.8	495,098	78,490,150	2,890,000	2,365,459	3.0	2.81	35,574,896
	1954	618,380	618,380	93.8	495,098	49,694,295	520,000	927,065	1.9	1.32	29,254,898
	1953	618,380	618,380	93.8	495,098	63,803,418	3,120,000	2,852,076	3.4	6.05	24,223,760
	1952	618,380	618,380	93.8	495,098	71,642,466	2,373,500	2,304,387	3.2	4.38	22,798,213
McLouth Steel Corp.	1956	1,380,000	1,372,592	99.5	1,092,877	163,906,619	9,110,000	8,806,258	5.4	5.01	123,232,929
	1955	1,200,000	1,200,000	99.5	1,092,877	144,987,476	7,375,000	8,148,342	5.6	5.66	127,716,528
	1954	960,000	434,320	55.4	368,667	51,688,444	2,090,000	1,694,890	3.2	1.42	132,513,536
	1953	579,700	528,734	91.2	473,963	60,479,849	11,560,000	5,241,501	4.1	4.41	94,027,396
Lone Star Steel Co.	1956	550,000	550,000	100.0	485,269	88,650,577	11,000,000	10,151,363	11.5	3.84	100,373,570
	1955	550,000	550,000	100.0	485,269	74,409,158	4,665,000	4,759,088	6.4	1.80	102,838,289
	1954	550,000	378,009	68.9	184,497	37,208,044	1,008,778	1,008,778	2.7	.38	105,038,365
Laclede Steel Co.	1956	500,000	505,575	101.1	398,181	66,509,030	4,575,000	4,086,071	6.14	19.81	26,832,561
	1955	500,000	473,708	94.7	398,181	56,191,338	4,700,000	4,047,053	7.0	19.62	24,658,700
	1954	500,000	396,023	79.2	311,140	45,384,073	3,050,000	2,943,150	6.5	14.27	22,100,596
	1953	440,000	427,514	97.2	362,040	60,634,318	4,975,000	2,705,805	5.3	13.11	20,736,280
	1952	410,000	413,292	100.8	355,630	47,545,026	2,754,000	2,132,746	4.5	10.34	17,353,323
Keystone Steel & Wire Co.	1956	450,000	438,364	97.41	353,019	66,629,700	7,993,443	8,013,050	12.03	4.27	35,559,840
	1955	425,000	416,090	97.90	344,414	62,020,363	8,830,268	8,768,519	14.1	4.68	31,296,790
	1954	425,000	334,444	78.7	275,229	49,332,276	6,981,536	6,114,772	12.4	3.26	26,278,271
	1953	425,000	355,969	84.0	288,790	44,554,153	4,061,627	4,149,946	9.3	2.21	23,163,498
	1952	425,000	389,762	91.7	312,063	48,939,590	6,116,648	4,073,232	8.3	2.17	22,013,553
Rotary Electric Steel Co.	1956	300,000	222,170	74.0	153,771	53,660,698	2,387,000	2,297,587	4.3	2.97	25,866,247
	1955	300,000	270,263	90.1	193,807	54,370,322	4,150,000	3,772,074	7.0	5.41	22,981,385
	1954	425,000	172,916	40.7	117,165	31,643,658	1,938,000	1,849,810	5.9	5.31	18,779,711
	1953	425,000	299,776	70.5	240,120	44,180,335	4,924,000	2,262,367	5.1	6.50	18,474,951
	1952	425,000	323,959	76.2	249,269	37,212,183	2,841,000	1,643,064	6.0	6.35	14,390,918
Continental Steel Corp.	1956	394,000	368,069	93.4	272,996	46,703,332	2,610,000	2,793,574	5.98	5.57	24,135,915
	1955	394,000	384,380	97.6	285,872	44,681,747	2,760,000	3,022,143	6.7	6.02	22,921,064
	1954	394,000	336,149	85.3	232,108	35,661,656	1,600,000	1,993,337	5.6	3.97	21,603,024
	1953	394,000	362,048	91.9	282,625	36,761,804	1,700,000	1,603,163	4.4	3.20	20,812,409
	1952	394,000	325,138	82.5	244,169	35,716,079	1,880,000	1,477,030	4.1	2.94	20,111,151
GRAND TOTALS	1956	119,410,000	107,000,000*	89.8	77,300,000*	\$14,328,463,893	\$1,050,902,715	\$1,044,606,967	7.2	6.96	\$9,790,957,624
	1955	117,257,517	109,000,000	93.0	78,000,000	13,228,937,770	1,027,287,914	1,034,621,961	7.8	7.16	9,132,627,147
	1954	115,324,652	81,900,000	71.0	56,700,000	9,577,835,487	583,857,391	600,363,984	6.0	9.99	8,205,155,029
	1953	109,658,940	104,200,000	94.9	74,000,000	12,285,361,088	932,780,178	890,920,244	5.6	.....	7,707,824,207
	1952	103,261,455	88,700,000	85.8	63,200,000	10,082,375,504	426,078,978	501,451,020	4.9	.....	7,363,066,759

*Estimated on operating rate.

Steel Prices: Hot and cold rolled sheet and strip, galvanized sheets, tinplate and high-speed tool steel.

STEEL INDUSTRY

COLD-ROLLED STRIP

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	2.80	3.20	3.55	4.00	4.20	4.75
Feb.	2.93	3.20	3.55	4.00	4.21	4.75
Mar.	3.05	3.20	3.55	4.00	4.21	4.75
Apr.	3.05	3.20	3.55	4.00	4.21	4.75
May	3.05	3.20	3.55	4.00	4.21	4.75
June	3.05	3.20	3.55	4.00	4.21	4.75
July	3.05	3.27	3.85	4.00	4.21	4.75
Aug.	3.05	3.35	4.00	4.00	4.21	4.75
Sept.	3.05	3.35	4.00	4.00	4.21	4.75
Oct.	3.05	3.35	4.00	4.00	4.21	4.75
Nov.	3.05	3.35	4.00	4.00	4.21	4.75
Dec.	3.17	3.55	4.00	4.06	4.75	4.75
Average	3.03	3.35	3.76	4.01	4.25	4.75
1952	1953	1954	1955	1956	1957	
Jan.	4.65	5.10	5.45	5.75	6.25	6.85
Feb.	4.65	5.10	5.45	5.75	6.25	6.85
Mar.	4.65	5.10	5.45	5.75	6.25	6.85
Apr.	4.65	5.10	5.45	5.75	6.25	6.85
May	4.65	5.10	5.45	5.75	6.25	6.85
June	4.65	5.25	5.45	5.75	6.25	6.85
July	4.74	5.45	5.75	6.12	6.25	7.17
Aug.	5.10	5.45	5.75	6.25	6.81	7.17
Sept.	5.10	5.45	5.75	6.25	6.85	7.17
Oct.	5.10	5.45	5.75	6.25	6.85	7.17
Nov.	5.10	5.45	5.75	6.25	6.85	7.17
Dec.	5.10	5.45	5.75	6.25	6.85	7.17
Average	4.85	5.29	5.60	5.98	6.48	7.01

COLD-ROLLED SHEETS

At Pittsburgh, Cents Per Pound

	1946*	1947	1948	1949	1950	1951
Jan.	3.05	3.20	3.55	4.00	4.10	4.35
Feb.	3.16	3.20	3.55	4.00	4.10	4.35
Mar.	3.275	3.20	3.55	4.00	4.10	4.35
Apr.	3.275	3.20	3.55	4.00	4.10	4.35
May	3.275	3.20	3.49	4.00	4.10	4.35
June	3.275	3.20	3.49	4.00	4.10	4.35
July	3.275	3.27	3.62	4.00	4.10	4.35
Aug.	3.275	3.35	4.00	4.00	4.10	4.35
Sept.	3.275	3.35	4.00	4.00	4.10	4.35
Oct.	3.275	3.35	4.00	4.00	4.10	4.35
Nov.	3.275	3.35	4.00	4.00	4.10	4.35
Dec.	3.215	3.55	4.00	4.04	4.35	4.35
Average	3.242	3.35	3.73	4.00	4.12	4.35
1952	1953	1954	1955	1956	1957	
Jan.	4.35	4.575	4.775	4.95	5.325	5.75
Feb.	4.35	4.575	4.775	4.95	5.325	5.75
Mar.	4.35	4.575	4.775	4.95	5.325	5.75
Apr.	4.35	4.575	4.775	4.95	5.325	5.75
May	4.35	4.575	4.775	4.95	5.325	5.75
June	4.35	4.800	4.775	4.95	5.325	5.75
July	4.395	4.775	4.930	5.231	5.325	6.05
Aug.	4.575	4.775	4.95	5.325	5.580	6.05
Sept.	4.575	4.775	4.95	5.325	5.75	6.05
Oct.	4.575	4.775	4.95	5.325	5.75	6.05
Nov.	4.575	4.775	4.95	5.325	5.75	6.05
Dec.	4.575	4.775	4.95	5.325	5.75	6.05
Average	4.449	4.682	4.862	5.127	5.488	5.90

* 1941-1945 = 3.05¢.

GALVANIZED SHEETS

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	3.70	3.55	3.95	4.40	4.40	4.80
Feb.	3.88	3.55	3.95	4.40	4.40	4.80
Mar.	4.05	3.55	3.95	4.40	4.40	4.80
Apr.	4.05	3.55	3.95	4.40	4.40	4.80
May	4.05	3.55	3.91	4.40	4.40	4.80
June	4.05	3.55	3.91	4.40	4.40	4.80
July	4.05	3.83	4.03	4.40	4.40	4.80
Aug.	4.05	3.85	4.40	4.40	4.40	4.80
Sept.	4.05	3.85	4.40	4.40	4.40	4.80
Oct.	4.05	3.85	4.40	4.40	4.40	4.80
Nov.	4.05	3.85	4.40	4.40	4.40	4.80
Dec.	3.65*	3.95	4.40	4.40	4.80	4.80
Average	3.99	3.72	4.13	4.40	4.43	4.80
1952	1953	1954	1955	1956	1957	
Jan.	4.80	5.075	5.275	5.45	5.85	6.30
Feb.	4.80	5.075	5.275	5.45	5.85	6.30
Mar.	4.80	5.075	5.275	5.45	5.85	6.30
Apr.	4.80	5.075	5.275	5.45	5.85	6.30
May	4.80	5.075	5.275	5.45	5.85	6.30
June	4.80	5.160	5.275	5.45	5.85	6.30
July	4.855	5.275	5.439	5.75	5.85	6.60
Aug.	5.075	5.275	5.45	5.85	6.120	6.60
Sept.	5.075	5.275	5.45	5.85	6.30	6.60
Oct.	5.075	5.275	5.45	5.85	6.30	6.60
Nov.	5.075	5.275	5.45	5.85	6.30	6.60
Dec.	5.075	5.275	5.45	5.85	6.30	6.60
Average	4.919	5.182	5.362	5.64	6.023	6.45

* Based on 10 gage since December 1948; 24 gage has up to that time.

HOT-ROLLED SHEETS

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	2.20	2.50	2.80	3.20	3.35	3.60
Feb.	2.31	2.50	2.80	3.20	3.35	3.60
Mar.	2.43	2.50	2.80	3.20	3.35	3.60
Apr.	2.43	2.50	2.80	3.20	3.35	3.60
May	2.43	2.50	2.77	3.25	3.35	3.60
June	2.43	2.50	2.77	3.25	3.35	3.60
July	2.43	2.56	2.99	3.25	3.35	3.60
Aug.	2.43	2.80	3.28	3.25	3.35	3.60
Sept.	2.43	2.80	3.28	3.25	3.35	3.60
Oct.	2.43	2.80	3.28	3.25	3.35	3.60
Nov.	2.43	2.80	3.28	3.25	3.35	3.60
Dec.	2.49	2.80	3.28	3.29	3.60	3.60
Average	2.40	2.63	3.00	3.26	3.37	3.60
1952	1953	1954	1955	1956	1957	
Jan.	3.60	3.775	3.925	4.05	4.325	4.675
Feb.	3.60	3.775	3.925	4.05	4.325	4.675
Mar.	3.60	3.775	3.925	4.05	4.325	4.675
Apr.	3.60	3.775	3.925	4.05	4.325	4.675
May	3.60	3.775	3.925	4.05	4.325	4.675
June	3.60	3.838	3.925	4.05	4.325	4.675
July	3.635	3.925	4.042	4.28	4.325	4.925
Aug.	3.775	3.925	4.05	4.325	4.535	4.925
Sept.	3.775	3.925	4.05	4.325	4.675	4.925
Oct.	3.775	3.925	4.05	4.325	4.675	4.925
Nov.	3.775	3.925	4.05	4.325	4.675	4.925
Dec.	3.775	3.925	4.05	4.325	4.675	4.925
Average	3.676	3.855	3.987	4.189	4.459	4.800

HOT-ROLLED STRIP

At Pittsburgh, Cents Per Pound

	1946*	1947	1948	1949	1950	1951
Jan.	2.10	2.50	2.80	3.20	3.25	3.50
Feb.	2.23	2.50	2.80	3.20	3.25	3.50
Mar.	2.35	2.50	2.80	3.20	3.25	3.50
Apr.	2.35	2.50	2.80	3.20	3.25	3.50
May	2.35	2.50	2.80	3.20	3.25	3.50
June	2.35	2.50	2.80	3.20	3.25	3.50
July	2.35	2.58	2.90	3.25	3.25	3.50
Aug.	2.35	2.80	3.28	3.25	3.25	3.50
Sept.	2.35	2.80	3.28	3.25	3.25	3.50
Oct.	2.35	2.80	3.28	3.25	3.25	3.50
Nov.	2.35	2.80	3.28	3.25	3.25	3.50
Dec.	2.47	2.80	3.28	3.25	3.50	3.50
Average	2.33	2.63	3.03	3.26	3.27	3.50
1952	1953	1954	1955	1956	1957	
Jan.	3.50	3.725	3.925	4.05	4.325	4.675
Feb.	3.50	3.725	3.925	4.05	4.325	4.675
Mar.	3.50	3.725	3.925	4.05	4.325	4.675
Apr.	3.50	3.725	3.925	4.05	4.325	4.675
May	3.50	3.725	3.925	4.05	4.325	4.675
June	3.50	3.810	3.925	4.05	4.325	4.675
July	3.545	3.925	4.042	4.286	4.325	4.925
Aug.	3.725	3.925	4.05	4.325	4.535	4.925
Sept.	3.725	3.925	4.05	4.325	4.675	4.925
Oct.	3.725	3.925	4.05	4.325	4.675	4.925
Nov.	3.725	3.925	4.05	4.325	4.675	4.925
Dec.	3.725	3.925	4.05	4.325	4.675	4.925
Average	3.606	3.832	3.987	4.181	4.459	4.80

* Over 8 in.; add 0.10¢ for 6 in. and under from February through November 1946.

STEEL PLATES

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	2.25	2.65	2.95	3.50	3.50	3.70
Feb.	2.38	2.65	2.95	3.50	3.50	3.70
Mar.	2.50	2.65	2.95	3.50	3.50	3.70
Apr.	2.50	2.65	2.95	3.50	3.50	3.70
May	2.50	2.65	2.93	3.40	3.50	3.70
June	2.50	2.71	2.93	3.40	3.50	3.70
July	2.50	2.95	3.07	3.40	3.50	3.70
Aug.	2.50	2.95	3.50	3.40	3.50	3.70
Sept.	2.50	2.95	3.50	3.40	3.50	3.70
Oct.	2.50	2.95	3.50	3.40	3.50	3.70
Nov.	2.50	2.95	3.50	3.40	3.50	3.70
Dec.	2.50	2.95	3.50	3.44	3.70	3.70
Average	2.47	2.80	3.19	3.43	3.52	3.70
1952	1953	1954	1955	1956	1957	
Jan.	3.70	3.90	4.10	4.225	4.50	4.85
Feb.	3.70	3.90	4.10	4.225	4.50	4.85
Mar.	3.70	3.90	4.10	4.225	4.50	4.85
Apr.	3.70	3.90	4.10	4.225	4.50	4.85
May	3.70	3.90	4.10	4.225	4.50	4.85
June	3.70	3.98	4.10	4.225	4.50	4.85
July	3.74	4.10	4.217	4.431	4.50	5.10
Aug.	3.90	4.10	4.225	4.50	4.71	5.10
Sept.	3.90	4.10	4.225	4.50	4.85	5.10
Oct.	3.90	4.10	4.225	4.50	4.85	5.10
Nov.	3.90	4.10	4.225	4.50	4.85	5.10
Dec.	3.90	4.10	4.225	4.50	4.85	5.10
Average	3.78	4.01	4.162	4.356	4.63	4.98

HIGH SPEED TOOL STEEL

STEEL INDUSTRY

Steel Prices: Hot rolled and cold-finished bars, wire, structurals, rails, pipe and stainless steel sheets.

MERCHANT BARS

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	2.25	2.60	2.90	3.45	3.45	3.70
Feb.	2.38	2.60	2.90	3.45	3.45	3.70
Mar.	2.50	2.60	2.90	3.45	3.45	3.70
Apr.	2.50	2.60	2.90	3.35	3.45	3.70
May	2.50	2.60	2.87	3.35	3.45	3.70
June	2.50	2.60	2.87	3.35	3.45	3.70
July	2.50	2.66	3.00	3.35	3.45	3.70
Aug.	2.50	2.90	3.45	3.35	3.45	3.70
Sept.	2.50	2.90	3.45	3.35	3.45	3.70
Oct.	2.50	2.90	3.45	3.35	3.45	3.70
Nov.	2.50	2.90	3.45	3.35	3.45	3.70
Dec.	2.58	2.90	3.45	3.38	3.70	3.70
Average	2.47	2.73	3.13	3.37	3.47	3.70

	1952	1953	1954	1955	1956	1957
Jan.	3.70	3.95	4.15	4.30	4.65	5.075
Feb.	3.70	3.95	4.15	4.30	4.65	5.075
Mar.	3.70	3.95	4.15	4.30	4.65	5.075
Apr.	3.70	3.95	4.15	4.30	4.65	5.075
May	3.70	3.95	4.15	4.30	4.65	5.075
June	3.70	4.04	4.15	4.30	4.65	5.075
July	3.75	4.15	4.29	4.56	4.65	5.425
Aug.	3.95	4.15	4.30	4.65	4.905	5.425
Sept.	3.95	4.15	4.30	4.65	4.905	5.425
Oct.	3.95	4.15	4.30	4.65	4.905	5.425
Nov.	3.95	4.15	4.30	4.65	4.905	5.425
Dec.	3.95	4.15	4.30	4.65	4.905	5.425
Average	3.79	4.06	4.22	4.46	4.813	5.220

COLD-FINISHED STEEL BARS

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	2.75	3.20	3.55	3.98	4.145	4.55
Feb.	2.93	3.20	3.55	3.98	4.145	4.55
Mar.	3.10	3.20	3.55	3.98	4.145	4.55
Apr.	3.10	3.20	3.55	3.98	4.145	4.55
May	3.10	3.20	3.50	3.98	4.145	4.55
June	3.10	3.20	3.50	3.98	4.145	4.55
July	3.10	3.27	3.62	3.98	4.145	4.55
Aug.	3.10	3.55	3.98	3.98	4.145	4.55
Sept.	3.10	3.55	3.98	3.98	4.145	4.55
Oct.	3.10	3.55	3.98	3.98	4.145	4.55
Nov.	3.10	3.55	3.98	3.98	4.145	4.55
Dec.	3.10	3.55	3.98	4.01	4.55	4.55
Average	3.06	3.35	3.74	3.98	4.179	4.55

	1952	1953	1954	1955	1956	1957
Jan.	4.55	4.925	5.20	5.40	5.90	6.85
Feb.	4.55	4.925	5.20	5.40	5.90	6.85
Mar.	4.55	4.925	5.20	5.40	5.90	6.85
Apr.	4.55	4.925	5.20	5.40	5.90	6.85
May	4.55	4.925	5.20	5.40	5.90	6.85
June	4.55	5.041	5.20	5.40	5.90	6.85
July	4.625	5.20	5.39	5.77	6.25	7.30
Aug.	4.925	5.20	5.40	5.90	6.61	7.30
Sept.	4.925	5.20	5.40	5.90	6.61	7.30
Oct.	4.925	5.20	5.40	5.90	6.61	7.30
Nov.	4.925	5.20	5.40	5.90	6.61	7.30
Dec.	4.925	5.20	5.40	5.90	6.61	7.30
Average	4.712	5.072	5.30	5.63	6.48	7.08

BUTTWELD STEEL PIPE

At Pittsburgh, Per Net Ton, Carload Lots

	1946	1947	1948	1949	1950	1951
Jan.	\$33.00	\$79.00	\$88.00	\$103.00	\$108.00	\$117.00
Feb.	68.00	79.00	91.50	103.00	108.00	117.00
Mar.	69.00	79.00	95.00	103.00	108.00	117.00
Apr.	69.00	79.00	95.00	103.00	108.00	117.00
May	69.00	79.00	94.00	103.00	108.00	117.00
June	69.00	79.00	93.00	103.00	108.00	117.00
July	69.00	79.00	95.00	103.00	108.00	117.00
Aug.	69.00	88.00	103.00	103.00	108.00	117.00
Sept.	69.00	88.00	103.00	103.00	108.00	117.00
Oct.	69.00	88.00	103.00	103.00	108.00	117.00
Nov.	69.00	88.00	103.00	103.00	108.00	117.00
Dec.	71.00	88.00	103.00	105.00	117.00	117.00
Average	68.42	82.75	97.21	103.17	108.75	117.00

	1952	1953	1954	1955	1956	1957
Jan.	\$117.00	\$124.00	\$136.50	\$141.50	\$152.00	\$164.00
Feb.	117.00	124.00	136.50	141.50	152.00	168.25
Mar.	117.00	124.00	136.50	141.50	152.00	168.50
Apr.	117.00	124.00	136.50	141.50	152.00	168.50
May	117.00	128.88	136.50	141.50	152.00	168.50
June	117.00	132.75	136.50	141.50	152.00	168.50
July	118.75	136.50	141.18	151.75	152.00	175.50
Aug.	124.00	136.50	141.50	154.00	159.20	176.50
Sept.	124.00	136.50	141.50	154.00	164.00	176.50
Oct.	124.00	136.50	141.50	154.00	164.00	176.50
Nov.	124.00	136.50	141.50	154.00	164.00	176.50
Dec.	124.00	136.50	141.50	154.00	164.00	176.50
Average	120.06	131.14	138.97	147.58	156.60	171.94

Computed from list discounts, for carload lots; 1-in. size, Standard, T. & C.

MANUFACTURER'S BRIGHT WIRE

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	2.75	3.30	3.55	4.33	4.50	4.85
Feb.	2.90	3.30	3.55	4.33	4.50	4.85
Mar.	3.05	3.30	3.55	4.22	4.50	4.85
Apr.	3.05	3.30	3.55	4.15	4.50	4.85
May	3.05	3.30	3.60	4.15	4.50	4.85
June	3.05	3.30	3.60	4.15	4.50	4.85
July	3.05	3.35	3.77	4.15	4.50	4.85
Aug.	3.05	3.55	4.33	4.15	4.50	4.85
Sept.	3.05	3.55	4.33	4.15	4.50	4.85
Oct.	3.05	3.55	4.33	4.15	4.50	4.85
Nov.	3.05	3.55	4.33	4.15	4.50	4.85
Dec.	3.10	3.55	4.33	4.29	4.85	4.85
Average	3.02	3.41	3.90	4.20	4.53	4.85

	1952	1953	1954	1955	1956	1957
Jan.	4.85	5.225	5.525	5.75	6.25	7.20
Feb.	4.85	5.225	5.525	5.75	6.80	7.20
Mar.	4.85	5.225	5.525	5.75	6.80	7.20
Apr.	4.85	5.225	5.525	5.75	6.80	7.20
May	4.85	5.225	5.525	5.75	6.80	7.20
June	4.85	5.352	5.525	5.75	6.80	7.20
July	4.925	5.525	5.735	6.125	6.80	7.65
Aug.	5.225	5.525	5.75	6.25	6.96	7.65
Sept.	5.225	5.525	5.75	6.25	7.20	7.65
Oct.	5.225	5.525	5.75	6.25	7.20	7.65
Nov.	5.225	5.525	5.75	6.25	7.20	7.65
Dec.	5.225	5.525	5.75	6.25	7.20	7.65
Average	5.012	5.386	5.636	5.989	6.80	7.43

STRUCTURAL STEEL SHAPES

At Pittsburgh, Cents Per Pound

	1946	1947	1948	1949	1950	1951
Jan.	2.10	2.50	2.80	3.25	3.40	3.65
Feb.	2.23	2.50	2.80	3.25	3.40	3.65
Mar.	2.35	2.50	2.80	3.25	3.40	3.65
Apr.	2.35	2.50	2.80	3.25	3.40	3.65
May	2.35	2.50	2.75	3.25	3.40	3.65
June	2.35	2.50	2.75	3.25	3.40	3.65
July	2.35	2.56	2.85	3.25	3.40	3.65
Aug.	2.35	2.80	3.25	3.25	3.40	3.65
Sept.	2.35	2.80	3.25	3.25	3.40	3.65
Oct.	2.35	2.80	3.25	3.25	3.40	3.65
Nov.	2.35	2.80	3.25	3.25	3.40	3.65
Dec.	2.35	2.80	3.25	3.31	3.65	3.65
Average	2.32	2.63	3.00	3.26	3.42	3.65

	1952	1953	1954	1955	1956	1957
Jan.	3.65	3.85	4.10	4.25	4.60	5.00
Feb.	3.65	3.85	4.10	4.25	4.60	5.00
Mar.	3.65	3.85	4.10	4.25	4.60	5.00
Apr.	3.65	3.85	4.10	4.25	4.60	5.00
May	3.65	3.85	4.10	4.25	4.60	5.00
June	3.65	3.96	4.10	4.25	4.60	5.00
July	3.69	4.10	4.24	4.51	4.60	5.275
Aug.	3.85	4.10	4.25	4.60	4.84	5.275
Sept.	3.85	4.10	4.25	4.60	5.00	5.275
Oct.	3.85	4.10	4.25	4.60	5.00	5.275
Nov.	3.85	4.10	4.25	4.60	5.00	5.275
Dec.	3.85	4.10	4.25	4.60	5.00	5.275
Average	3.74	3.98	4.17	4.41	4.75	5.178

CAST IRON WATER PIPE

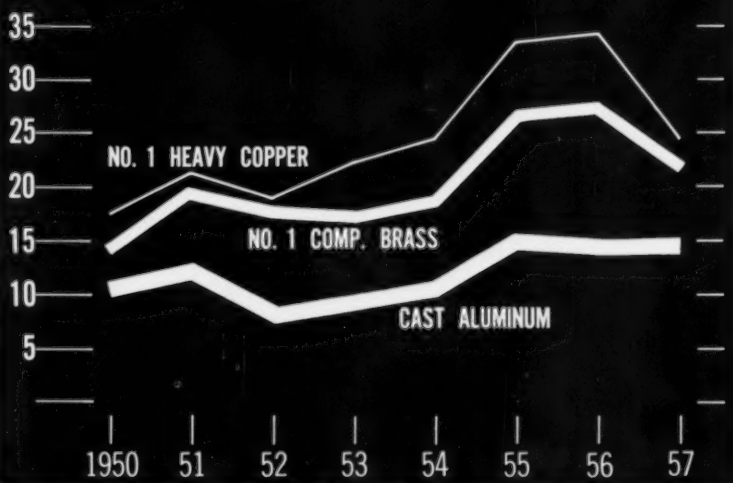
At New York, Net Ton, 6-in. and Larger

	1946	1947	1948	1949	1950	1951
Jan.	\$57.20	\$73.60	\$89.18	\$105.95	\$94.95	\$105.00
Feb.	57.20	73.75	89.18	105.95	92.38	109.00
Mar.	60.20	76.80	89.18	105.95	91.50	109.00
Apr.	62.20	79.80	89.18	103.68	91.50	109.00
May	62.20	79.80	92.34	94.95	91.50	109.00
June	62.20	79.80	95.50	94.95	91.50	109.00
July	69.60	80.50	95.50	94.95	91.50	109.00
Aug.	69.60	83.30	103.66	94.95	91.50	109.00
Sept.	69.60	83.30	105.95	94.95	91.50	109.00
Oct.	69.60	83.30	105.95	94.95	95.00	109.00
Nov.	69.60	84.18	105.95	94.95	95.00	109.00
Dec.	75.60	84.18	105.95	94.94	98.00	109.00
Average	65.23	80.25	97.31	98.45	92.98	106.87

	1952	1953	1954	1955	1956	1957
Jan.	\$109.00	\$114.00	\$115.50	\$118.90	\$121.50	\$131.40
Feb.	109.00	114.00	115.50	118.90	121.50	131.70
Mar.	109.00	114.00	115.50	118.90	121.50	131.70
Apr.	109.00	114.00	115.50	118.90	123.50	131.70
May	109.00	114.00	115.50	118.90	123.70	131.70
June	109.00	114.00	115.50	118.90	125.60	131.70
July	109.00	115.50	115.50	118.90	125.60	131.70

NONFERROUS SCRAP PRICES

Cents per Pound



ALUMINUM SCRAP, CAST

Cents Per Pound, f.o.b. New York*

	1952	1953	1954	1955	1956	1957
Jan.	7.75	7.75	8.88	11.50	17.25	11.12
Feb.	7.75	8.83	8.90	12.94	17.25	10.37
Mar.	7.75	9.50	8.85	14.75	17.25	10.25
Apr.	7.75	9.13	10.25	14.63	16.88	10.62
May	7.75	8.25	11.00	12.85	14.05	10.75
June	7.25	9.20	10.00	12.00	11.50	10.75
July	7.25	10.00	10.00	14.38	12.50	10.75
Aug.	7.25	9.25	10.00	16.50	13.00	11.15
Sept.	7.25	9.00	10.75	17.10	13.50	11.25
Oct.	7.75	8.25	11.00	17.13	13.00	11.15
Nov.	7.75	9.63	11.00	17.13	11.75	10.87
Dec.	7.75	10.30	11.00	17.13	12.25	10.75
Average	7.51	9.07	10.10	14.84	14.18	10.82

* Dealers' Buying Price.

BRASS SCRAP, No. 1 COMPOSITION

Cents Per Pound, f.o.b. New York*

	1952	1953	1954	1955	1956	1957
Jan.	18.25	17.75	18.44	21.31	31.50	24.12
Feb.	18.25	18.63	15.75	23.19	31.50	21.75
Mar.	18.25	19.10	17.00	24.10	33.60	20.75
Apr.	18.25	18.56	17.75	25.88	32.12	21.12
May	18.25	16.81	18.08	24.90	27.00	20.95
June	17.75	16.75	19.25	24.94	23.75	20.12
July	17.75	16.75	19.25	26.89	24.00	18.75
Aug.	17.75	15.44	19.25	28.61	25.50	18.60
Sept.	17.75	15.50	19.44	30.25	26.00	16.89
Oct.	17.74	16.06	20.03	29.31	25.75	16.15
Nov.	17.75	16.81	20.70	30.30	23.75	16.00
Dec.	17.75	17.35	21.00	31.75	24.00	15.75
Average	17.96	17.13	18.73	26.79	27.37	19.23

* Dealers' Buying Price.

Nonferrous Metal Powders



No. 1 HEAVY COPPER SCRAP

Cents Per Pound, f.o.b. New York*

	1952	1953	1954	1955	1956	1957
Jan.	19.00	19.00	22.63	27.00	41.00	26.63
Feb.	19.00	21.25	22.83	29.18	40.50	23.75
Mar.	19.00	25.70	23.50	30.15	43.40	23.75
Apr.	19.00	23.75	24.00	31.44	40.75	24.09
May	19.00	21.81	24.63	31.05	35.30	23.60
June	19.00	23.15	24.75	33.00	31.25	22.75
July	19.00	23.00	24.75	33.75	30.13	21.25
Aug.	19.00	21.25	24.75	35.63	32.13	20.85
Sept.	19.00	21.50	24.94	36.65	31.38	18.28
Oct.	19.00	22.13	25.63	36.69	29.25	18.95
Nov.	19.00	23.38	25.75	36.25	27.85	19.00
Dec.	19.00	23.55	26.63	41.00	27.75	19.00
Average	19.00	22.46	24.55	33.82	34.21	21.82

* Dealers' Buying Price.

BRASS INGOTS, 85-5-5-5

No. 115, Cents Per Pound, Cars*

	1952	1953	1954	1955	1956	1957
Jan.	27.25	27.25	24.50	30.38	42.00	34.75
Feb.	27.25	27.81	23.75	32.81	42.00	32.25
Mar.	27.25	29.50	23.50	33.80	44.00	31.50
Apr.	27.25	28.00	25.75	37.00	43.50	31.50
May	27.25	26.00	26.50	35.30	40.60	31.10
June	27.25	26.00	27.00	34.50	36.25	30.25
July	27.25	25.63	27.00	36.50	35.50	29.50
Aug.	27.25	24.50	27.45	39.19	37.75	29.35
Sept.	27.25	24.50	28.13	42.50	37.75	27.62
Oct.	27.25	24.50	29.19	41.75	37.06	27.35
Nov.	27.25	24.50	29.50	41.75	35.00	26.75
Dec.	27.25	24.50	30.00	42.00	35.00	26.75
Average	27.25	26.06	26.86	37.29	39.70	29.89

* Delivered.

INGOT BRASS AND BRONZE

Short Tons of Shipments, Monthly

	1953	1954	1955	1956	1957
Jan.	24,423	20,661	25,201	27,736	25,661
Feb.	25,429	19,920	25,349	24,949	20,769
Mar.	26,256	23,653	29,713	26,310	21,948
Apr.	25,044	24,746	27,641	25,808	23,507
May	21,660	22,269	23,708	23,437	22,037
June	20,818	22,348	23,141	18,842	18,688
July	19,321	17,074	18,513	17,364	16,695
Aug.	20,158	21,684	27,013	23,812	19,654
Sept.	21,463	22,464	26,349	20,929	19,670
Oct.	22,820	24,090	25,226	23,045	20,250*
Nov.	21,860	23,081	25,102	21,518	21,506*
Dec.	20,541	21,273	21,448	16,046	18,750*
Total	271,251	263,233	296,406	274,096	250,349*

* Estimate. Source: Brass & Bronze Ingot Institute.

BRONZE INGOTS, 88-10-2

No. 245, Cents Per Pound, Cars*

	1952	1953	1954	1955	1956	1957
Jan.	33.70	34.50	29.50	35.13	48.75	39.50
Feb.	34.50	34.88	28.75	37.56	48.75	36.62
Mar.	34.50	36.00	28.50	38.95	50.75	35.50
Apr.	34.50	33.66	31.94	42.25	50.25	35.50
May	34.50	30.25	32.75	40.55	46.80	35.10
June	34.50	30.25	33.25	39.75	42.25	34.22
July	34.50	30.06	33.25	41.75	41.50	33.50
Aug.	34.50	29.50	33.40	45.50	43.50	33.35
Sept.	34.50	29.50	33.69	48.75	43.50	31.25
Oct.	34.50	29.50	34.50	48.00	42.63	30.85
Nov.	34.50	29.50	34.75	48.00	40.00	30.25
Dec.	34.50	29.50	34.75	48.75	40.00	30.25
Average	34.43	31.42	32.42	42.91	44.89	33.82

* Delivered.

CADMIUM PRICES, STICKS, BARS

Dollars Per Pound, 1 to 5-Ton Lots

December 5, 1946 to February 19, 1947	\$1.50
February 20, 1947 to August 11, 1948	1.75
August 12, 1948 to November 17, 1948	1.90
November 18, 1948 to June 14, 1950	2.00
June 15, 1950 to September 10, 1950	2.15
September 11, 1950 to November 30, 1950	2.40
December 2, 1950 to May 26, 1952	2.55
May 27, 1952 to August 5, 1952	2.25
August 6, 1952 to November 30, 1952	2.00
December 1, 1952 to December 13, 1952	1.50 2.00
December 13, 1952 to January 24, 1953	1.75 2.00
January 25, 1953 to January 31, 1954	2.00
February 1, 1954 to December 31, 1957	1.70

COBALT, 97 TO 99 PCT.

Per Pound, 550 lb Lots Since 1947

July 1, 1947 to March 31, 1949	\$1.65
April 1, 1949 to December 31, 1950	1.80
January 2, 1951 to October 1, 1951	2.10
October 1, 1951 to October 31, 1953	2.40
November 2, 1953 to December 5, 1956	\$2.60 to 2.67
December 6, 1956 to February 13, 1957	2.35 to 2.42
February 14, 1957 to December 31, 1957	2.00 to 2.07

A weekly column on the non-ferrous market as well as complete nonferrous and metal powder prices are a regular Iron Age feature.

REMELT ALUMINUM INGOT

No. 12, Cents Per Pound, Cars*

	1952	1953	1954	1955	1956	1957
Jan.	19.50	19.50	19.38	23.44	32.00	23.31
Feb.	19.50	20.25	18.86	25.98	30.63	22.82
Mar.	19.50	22.47	19.18	29.65	30.10	22.81
Apr.	19.50	22.75	20.75	29.38	30.25	22.69
May	19.50	22.28	20.38	26.70	27.00	21.70
June	19.50	22.70	19.50	26.00	24.63	21.31
July	19.50	22.59	19.50	26.69	25.19	22.09
Aug.	19.50	22.13	19.78	29.69	27.44	23.00
Sept.	19.50	21.83	20.19	30.35	27.25	22.69
Oct.	19.50	20.28	20.81	30.75	25.75	22.55
Nov.	19.50	20.34	20.88	31.00	24.07	22.50
Dec.	19.50	20.20	21.13	31.25	24.25	22.50
Average	19.42	21.44	20.00	28.41	27.38	22.48

* Delivered.

NONFERROUS

STRAITS TIN, PROMPT PRICE

Cents Per Pound, at New York

	1946	1947	1948	1949	1950	1951
Jan.	82.00	70.00	94.00	1.03	75.75	\$1.72
Feb.	82.00	70.00	94.00	1.03	74.50	\$1.63
Mar.	82.00	70.00	94.00	1.03	75.62	\$1.45
Apr.	82.00	80.00	94.00	1.03	76.38	\$1.46
May	82.00	80.00	94.00	1.03	77.50	\$1.40
June	82.00	80.00	1.03	1.03	77.70	\$1.18
July	82.00	80.00	1.03	1.03	89.88	\$1.06
Aug.	82.00	80.00	1.03	1.03	81.02	\$1.03
Sept.	82.00	80.00	1.03	1.02	81.01	\$1.03
Oct.	82.00	80.00	1.03	95.49	81.13	\$1.03
Nov.	81.00	80.00	1.03	90.11	81.38	\$1.03
Dec.	70.00	85.38	1.03	79.06	81.45	\$1.03
Average	54.00	77.95	99.25	99.22	95.53	\$1.27

	1952	1953	1954	1955	1956	1957
Jan.	\$1.087	\$1.215	84.83	87.28	104.82	101.53
Feb.	\$1.215	\$1.215	85.04	90.78	100.78	101.06
Mar.	\$1.215	\$1.214	91.88	91.04	100.67	99.70
Apr.	\$1.215	\$1.011	95.13	91.40	99.27	99.30
May	\$1.215	\$7.50	95.51	91.37	97.01	98.29
June	\$1.215	92.92	94.19	93.64	94.19	98.06
July	\$1.215	81.90	96.54	96.82	96.24	96.55
Aug.	\$1.212	80.71	93.39	96.46	99.08	94.26
Sept.	\$1.213	82.36	93.52	96.26	103.63	93.44
Oct.	\$1.212	80.86	93.05	96.09	106.87	91.89
Nov.	\$1.213	83.11	91.14	97.57	110.91	89.23
Dec.	\$1.215	94.61	88.57	107.76	108.00	89.00*
Average	\$1.204	95.79	91.82	94.73	\$1.018	96.03*

* Tentative.

ANTIMONY, U. S. METAL

Cents Per Pound, F.O.B. Laredo, Tex.

	1952	1953	1954	1955	1956	1957
Jan.	50.00	84.50	28.50	28.50	33.50	33.50
Feb.	50.00	84.50	28.50	28.50	33.50	33.50
Mar.	50.00	84.50	28.50	28.50	33.50	33.50
Apr.	50.00	84.50	28.50	28.50	33.50	33.50
May	42.75	34.50	28.50	28.50	33.50	33.50
June	39.00	34.50	28.50	28.50	33.50	33.50
July	39.00	34.50	28.50	28.50	33.50	33.50
Aug.	39.00	34.50	28.50	29.75	33.50	33.50
Sept.	39.00	34.50	28.50	33.50	33.50	33.50
Oct.	39.00	34.50	28.50	33.50	33.50	33.50
Nov.	35.83	33.72	28.50	33.50	33.50	33.50
Dec.	34.50	28.50	28.50	33.50	33.50	33.50
Average	42.32	33.94	28.50	30.27	33.50	33.50

MAGNESIUM, 99.8 PCT INGOT

Cents Per Pound, at Freeport, Tex.

	1931	1940	1949	1950	1951	1952
Jan.	34.00	27.00	20.50	20.50	20.50	20.50
Feb.	29.00	27.00	20.50	22.02	20.50	20.50
Mar.	28.00	22.50	20.50	20.50	20.50	20.50
Apr.	26.00	20.50	20.50	20.50	20.50	20.50
May	30.00	20.50	20.50	20.50	20.50	20.50
June	30.00	20.50	20.50	20.50	20.50	20.50
July	30.00	20.50	20.50	20.50	20.50	20.50
Aug.	30.00	20.50	20.50	20.50	20.50	20.50
Sept.	30.00	20.50	20.50	20.50	20.50	20.50
Oct.	30.00	20.50	20.50	20.50	20.50	20.50
Nov.	30.00	20.50	20.50	20.50	20.50	20.50
Dec.	30.00	20.50	20.50	20.50	20.50	20.50
Average	27.00	20.50	20.50	20.50	20.50	20.50

Prices: Straits tin, electrolytic copper, nickel, aluminum, antimony and U.S. primary aluminum production.

ELECTROLYTIC COPPER

Cents Per Pound, Conn. Valley

	1946*	1947	1948	1949	1950	1951
Jan.	12.00	19.56	21.50	23.50	18.50	24.50
Feb.	12.00	19.75	21.50	23.50	18.50	24.50
Mar.	12.00	21.50	21.50	23.49	18.50	24.50
Apr.	12.00	21.50	21.50	21.72	18.94	24.50
May	12.00	22.63	21.50	18.05	19.92	24.50
June	14.28	21.63	21.50	16.68	22.27	24.50
July	14.375	21.50	21.50	17.33	22.50	24.50
Aug.	14.375	21.50	23.43	17.63	22.54	24.50
Sept.	14.375	21.50	23.50	17.63	23.25	24.50
Oct.	14.375	21.50	23.50	17.63	24.50	24.50
Nov.	17.19	21.50	23.50	18.42	24.50	24.50
Dec.	19.50	21.50	23.50	18.50	24.50	24.50
Average	14.04	21.30	22.33	18.51	21.54	24.50

	1952	1953	1954	1955	1956	1957
Jan.	24.50	24.50	29.75	30.17	43.00	36.00
Feb.	24.50	25.41	29.75	33.00	44.026	33.14
Mar.	24.50	30.58	29.87	33.22	46.00	33.14
Apr.	24.50	30.70	29.97	36.00	46.00	32.00
May	24.50	29.85	30.00	36.00	46.00	32.00
June	24.50	29.88	30.00	36.00	46.00	30.90
July	24.50	29.88	30.00	36.00	41.68	29.25
Aug.	24.50	29.39	30.00	36.26	40.00	28.72
Sept.	24.50	29.50	30.00	43.00	40.00	27.00
Oct.	24.50	29.61	30.00	43.00	39.33	27.00
Nov.	24.50	29.75	30.00	43.00	36.00	27.00
Dec.	24.50	29.75	30.00	43.00	36.00	27.00*
Average	24.50	29.07	29.95	37.55	42.00	30.27*

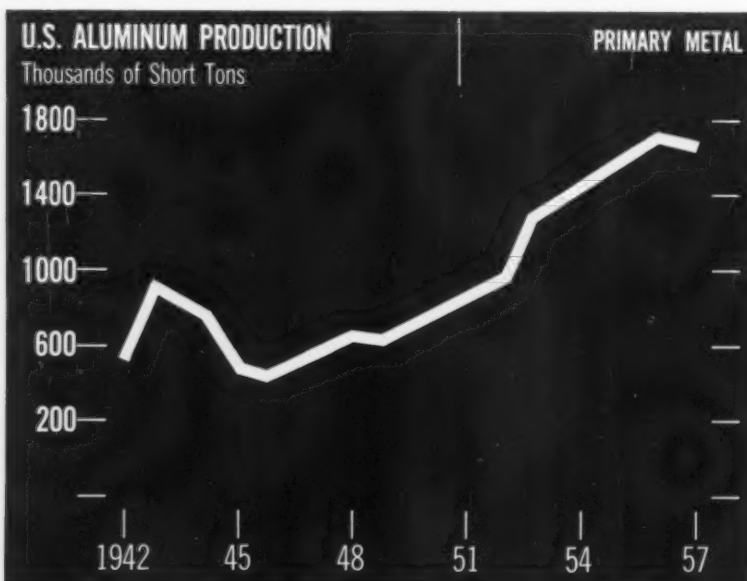
* 1941-1945 incl. 12.00.

U. S. PRODUCTION OF PRIMARY ALUMINUM (Short tons)

	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	53,356	52,023	67,964	76,934	89,895	116,247	128,203	140,394	147,029
Feb.	49,749	50,443	62,740	72,374	92,649	110,483	116,236	132,763	119,059
Mar.	54,852	58,747	70,022	77,069	104,920	122,339	130,272	145,895	135,706
Apr.	54,078	58,024	67,701	76,880	102,071	120,431	126,394	144,726	139,152
May	56,909	61,929	67,720	80,804	105,477	125,144	131,128	150,800	145,174
June	54,184	60,400	67,454	77,476	104,162	120,758	127,633	145,726	138,007
July	55,777	63,508	72,696	78,368	108,285	126,162	132,667	151,824	142,041
Aug.	52,005	63,016	73,816	85,175	110,545	125,296	133,551	149,406	143,448
Sept.	49,742	59,449	69,429	76,882	108,333	120,332	130,608	132,316	129,277
Oct.	45,780	62,916	72,647	77,312	108,219	125,089	134,656	149,125	133,759
Nov.	35,855	62,276	72,246	74,839	105,637	121,252	133,689	145,081	135,024
Dec.	41,161	65,897	72,454	83,409	110,291	127,035	140,748	148,391	137,000*
Total	603,462	716,622	836,891	937,321	1,252,015	1,458,500	1,565,783	1,678,954	1,644,677*

* Estimate.

Source: U. S. Bureau of Mines and Aluminum Association.



ELECTROLYTIC NICKEL

Cents Per Pound, New York, Duty Paid

	1940	1941*	1948*	1949	1950	1951
Jan. 1, 1948 to July 21, 1948	20.00	17.00	15.00	17.00	17.00	19.00
July 22, 1948 to Feb. 15, 1949	20.00	17.00	15.00	17.00	17.00	19.00
Feb. 16, 1949 to Oct. 4, 1949	20.00	17.00	15.00	17.00	17.00	19.00
Oct. 5, 1949 to May 31, 1950	19.00	17.00	15.00	17.00	17.00	19.00
June 1, 1950 to Dec. 12, 1950	19.00	17.00	15.00	17.00	17.00	19.00
Dec. 13, 1950 to June 1, 1951	19.00	17.00	15.00	17.00	17.00	19.00
June 2, 1951 to Jan. 13, 1953	19.00	17.00	15.00	17.00	17.00	19.00
Jan. 14, 1953 to Nov. 23, 1954	19.00	17.00	15.00	17.00	17.00	19.00
(F.O.B., Port Colbourne, Canada)	19.00	17.00	15.00	17.00	17.00	19.00
Nov. 24, 1954 to Dec. 5, 1956	19.00	17.00	15.00	17.00	17.00	19.00
Dec. 6, 1956 to Dec. 31, 1957	19.00	17.00	15.00	17.00	17.00	19.00
Average	18.71	16.50	15.68	17.00	17.00	19.00

ALUMINUM 99 PCT INGOT

Cents Per Pound, Freight Allowed

	1940	1941*	1948*	1949	1950	1951
Jan.	20.00	17.00	15.00	17.00	17.00	19.00
Feb.	20.00	17.00	15.00	17.00	17.00	19.00
Mar.	20.00	17.00	15.00	17.00	17.00	19.00
Apr.	19.00	17.00	15.00	17.00	17.00	19.00
May	19.00	17.00	15.00	17.00	17.00	19.00
June	19.00	17.00	15.00	17.00	17.00	19.00
July	19.00	17.00	15.00	17.00	17.00	19.00
Aug.	19.00	17.00	15.00	17.00	17.00	19.00
Sept.	19.00	17.00	15.00	17.00	17.00	19.00
Oct.	19.00	17.00	15.00	17.00	17.00	19.00
Nov.	19.00	17.00	15.00	17.00	17.00	19.00
Dec.	19.00	17.00	15.00	17.00	17.00	19.00
Average	18.71	16.50	15.68	17.00	17.00	19.00

* 1942-1947 incl. 15.00.

Prices: Lead, zinc . . . U. S. primary magnesium production . . . Metal powder prices including iron, zinc, copper.

LEAD PRICE, COMMON GRADE

Cents Per Pound, at St. Louis

	1941†	1946†	1947	1948	1949	1950	1951
Jan.	5.50	6.50	13.00	15.00	21.50	12.00	17.00
Feb.	5.60	6.50	13.25	15.00	21.50	12.00	17.00
Mar.	5.77	6.50	15.00	15.00	16.96	16.96	17.00
Apr.	5.85	6.50	15.00	17.21	15.12	16.83	17.00
May	5.85	6.50	15.00	17.50	13.78	11.72	17.00
June	5.85	6.18	15.00	17.50	12.00	11.61	17.00
July	5.85	9.18	15.00	17.80	13.56	11.66	17.00
Aug.	5.85	8.25	15.00	18.50	14.99	12.93	17.00
Sept.	5.85	8.25	15.00	19.50	15.05	15.60	17.00
Oct.	5.85	8.25	15.00	19.50	13.42	16.96	15.93
Nov.	5.85	10.41	15.00	21.50	12.52	17.00	19.00
Dec.	5.85	12.20	15.00	21.50	12.00	17.00	19.00
Average	5.79	8.10	14.69	18.04	15.37	13.29	17.49

	1952	1953	1954	1955	1956	1957
Jan.	19.00	14.19	13.26	15.00	15.96	15.80
Feb.	19.00	13.50	12.82	15.00	15.80	15.80
Mar.	19.00	13.40	12.94	15.00	15.80	15.80
Apr.	18.91	12.64	13.91	15.00	15.80	15.80
May	15.73	12.74	14.00	15.00	15.80	15.023
June	15.08	13.41	14.11	15.00	15.80	14.12

	1952	1953	1954	1955	1956	1957
July	16.00	13.68	14.00	14.90	15.80	13.80
Aug.	16.00	14.00	14.06	14.80	15.80	13.80
Sept.	16.00	13.74	14.60	14.94	15.80	13.80
Oct.	14.40	13.50	14.98	15.30	15.80	13.51
Nov.	14.18	13.50	15.00	15.30	15.80	13.30
Dec.	14.13	13.50	15.00	15.30	15.80	12.80*
Average	16.45	13.46	14.06	15.05	15.81	14.45*

† 1942-1945 incl.: 6.50.

* Tentative.

AVERAGE COPPER POWDER PRICE

Cents per lb., F.O.B. Mill—100 Mesh

	Electrolytic	Reduced
1952 Average	35.25	34.50
1953 Average	41.49	41.14
1954 Average	43.50	43.50
1955 Average	53.37	53.37
1956 Average	60.50	60.50
1957 Average	45.67	49.75

AVERAGE ZINC POWDER PRICE

Cents per lb., F.O.B. Mill—100 Mesh

	1951 Average	1952 Average	1953 Average	1954 Average	1955 Average	1956 Average	1957 Average
	22.54 to 29.25	23.0 to 30.50	17.38 to 24.86	17.50 to 25.00	18.50 to 32.25	18.75 to 32.50	18.25 to 31.63

IMPORTS OF IRON POWDER

Net Tons

	1950	1951	1952	1953	1954	1955	1956	1957
	7,607	12,850	5,627	6,964	8,835	10,988	10,125	5,888*

* Estimate.

COPPER POWDER SHIPMENTS

Net Ton

	Total	Bearings and Parts	Friction Materials	Graphite Metal Brushes	Miscellaneous
1946	7,380	5,900	560	330	590
1947	8,700	7,170	615	385	600
1948	8,580	5,560	675	575	770
1949	7,014	4,374	1,158	450	1,032
1950	13,109	9,488	1,271	957	1,393
1951	13,571	11,013	963	390	1,205
1952	8,979	6,731	1,061	282	905
1953	11,515	9,281	1,081	430	944
1954	9,875	7,450	770	510	945
1955	11,895	8,065	1,490	900	1,440
1956	10,706*	7,259*	1,341*	810*	1,306*

* Estimate.

1956-1957 figures not available.
No longer compiled by Metal Powder Assn.

IRON POWDER AVERAGED MONTHLY PRICES

Cents Per Pound, F.O.B. Mill Unless Otherwise Specified

	Swedish Sponge, Riverfront, N. J., Ocean Bags, —100 Mesh	Domestic Sponge, 98+ Pct Fe, Carload Lots, —100 Mesh	Electrolytic, Annealed, 99.5+ Pct Fe, —100 Mesh	Electrolytic, Unannealed, —325 Mesh, 99+ Pct Fe	Hydrogen Reduced, —300 Mesh, 98+ Pct Fe	Carbonyl, 5-10 Microns, 98-99.8+ Pct Fe
1952 Aver.	8.57 to 9.79	15.5 to 17.0	43.1	56.2	63.0 to 80.0	83.0 to 148.0
1953 Aver.	11.5	16.36	44.0	60.00	63.0 to 80.0	83.0 to 148.0
1954 Aver.	11.25	16.35	40.75	56.48	63.0 to 80.0	83.0 to 148.0
1955 Aver.	10.37	9.5	36.5	58.2	55.0 to 85.0	86.0 to 155.0
1956 Aver.	8.50	9.5	36.5	57.0	80	86.0 to 155.0
1957 Aver.	9.50	9.50	36.5	57.0		87.0 to 220.0

U. S. PRODUCTION OF PRIMARY MAGNESIUM

Short Tons

Month	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
January	98	1,398	883	888	1,002	1,876	7,425	9,908	6,446	5,089	6,337	7,391
February	48	1,232	830	884	913	1,709	7,794	9,078	5,856	4,646	5,908	6,817
March	10	1,472	887	988	948	1,885	8,893	10,352	5,545	4,942	6,347	7,383
April		1,153	801	958	957	2,043	8,800	9,751	5,203	1,859	6,081	7,222
May		926	797	937	972	2,194	9,093	9,116	6,460	4,277	6,359	7,227
June	241	848	768	950	1,175	2,512	8,670	7,286	6,180	4,757	6,098	6,718
July	692	905	792	965	1,132	2,998	9,529	8,267	6,069	5,112	1,136	6,598
August	889	849	808	970	1,400	3,418	9,771	8,285	5,771	5,880	3,314	6,958
September	986	886	819	974	1,635	4,156	8,422	8,076	5,325	5,923	6,128	6,296
October	1,000	912	873	941	1,690	5,147	8,990	6,341	5,149	6,286	6,735	6,276
November	558	870	814	969	1,780	6,043	9,123	6,227	4,942	6,130	6,818	6,400*
December	795	893	932	1,004	1,942	8,923	9,323	8,467	4,788	6,230	7,085	6,500*
Total	5,317	12,344	10,003	11,598	15,726	40,914	105,833	93,075	69,724	61,131	68,346	82,114*

Producers' reports to Bureau of Mines and Magnesium Assn.

* Estimate.

SHIPMENTS OF IRON POWDER

Total Net Tons, Four Major Classes*

	Total	Bearings and Parts	Friction Materials	Electronic & Magnetic Applications	Miscellaneous	Welding Electrodes — Flame Cutting	Pharmaceuticals
1946	2,485	1,350	30	415	690		
1947	3,115	1,560	30	600	945		
1948	3,520	1,658	25	890	820		
1949	3,235	1,748	14	835	540		
1950	3,942	1,570	23	1,611	738		
1951	3,651	2,150	1.5	900	600		
1952	4,048	2,109	1.0	336	1,602		
1953	6,255	3,457	14.4	1,599	1,189		
1954	7,835	3,445	75.0	905	3,410		
1955	20,724	8,990	99.5	1,067.5	9,837		
1956	22,195	8,900	144.5	1,071	12,030		
1957†	25,645	11,771	218.0	891	1,100	11,729	140

* Domestic.

† Estimates.

PRIME WESTERN ZINC PRICE

Cents Per Pound, at E. St. Louis

	1941†	1946†	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	7.65	8.85	11.005	11.69	18.18	9.48	18.22	20.29	13.43	10.26	12.00	13.44	13.50
Feb.	7.85	8.85	11.005	12.61	18.20	10.47	18.22	20.29	12.31	9.88	12.00	13.50	13.50
Mar.	7.55	8.66	11.005	12.61	17.78	10.66	18.22	20.29	11.96	10.16	12.00	13.50	13.50
Apr.	7.55	8.65	11.005	12.61	14.76	11.41	18.25	20.29	11.83	10.75	12.43	13.50	13.50
May	7.85	8.65	11.005	12.64	12.71	18.25		20.33	11.83	10.78	12.50	13.50	11.93
June	7.55	8.65	11.005	12.65	10.27	15.49	18.25	18.57	11.83	11.46	12.75	13.50	10.84
July	7.65	8.69	11.005	13.09	10.06	15.72	18.25	15.83	11.67	11.50	13.00	13.50	10.00
Aug.	7.65	8.69	11.005	15.65	10.70	15.72	18.26	14.88	11.53	11.50	13.00	13.50	10.00
Sept.	7.65	8.69	11.005	15.65	10.77	17.82	18.29	14.86	10.88	11.98	13.40	13.50	10.00
Oct.	8.36	9.28	11.03	15.74	10.64	18.22	20.22	14.08	10.50	12.00	13.50	13.50	10.00
Nov.	8.65	10.96	11.08	17.27	10.46	18.22	20.29	13.33	10.50	12.00	13.50	13.50	10.00
Dec.	8.65	10.94	11.06	16.15	10.47	18.22	20.29	13.33	10.50	12.00	13.50	13.50	10.00*
Average	7.80	9.09	11.02	14.20	12.85	14.51	18.75	Average	17.03	11.54	11.19	12.79	13.49

† 1942-1945, incl.: 8.65.

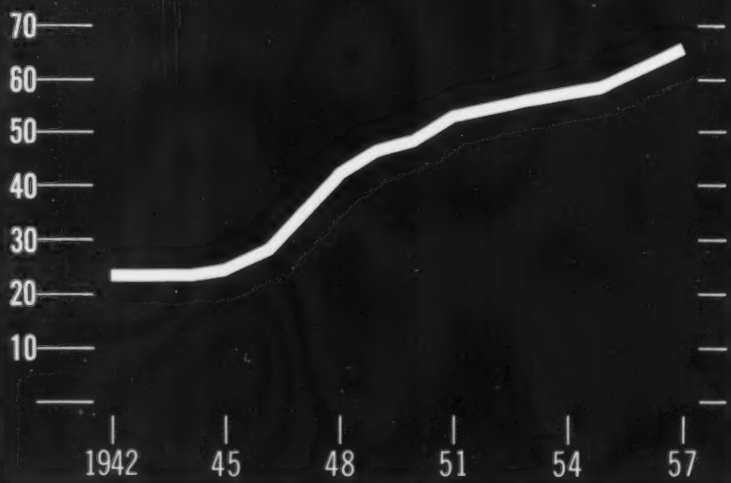
Pig Iron and Iron Ore



PIG IRON PRICES

Dollars per Gross Ton

The Iron Age Composite



COMPOSITE PIG IRON PRICE

Average of THE IRON AGE quotations on basic pig iron at Valley furnaces and foundry iron at Chicago, Birmingham, Buffalo, Valley and Philadelphia, in gross tons.

	1937	1938	1939	1940	1941*	1945*		1946	1947	1948	1949	1950	1951		1952	1953	1954	1955	1956	1957
Jan.	\$20.25	\$23.25	\$20.61	\$22.61	\$23.45	\$23.61	Jan.	\$25.37	\$30.14	\$39.83	\$46.79	\$45.98	\$52.69	Jan.	\$52.72	\$55.26	\$56.59	\$58.59	\$59.09	\$62.90
Feb.	20.50	23.25	20.61	22.61	23.45	23.61	Feb.	25.37	30.15	40.27	46.74	46.38	52.69	Feb.	52.72	55.26	56.59	56.59	59.09	62.90
Mar.	22.85	23.25	20.61	22.61	23.53	24.61	Mar.	25.75	32.92	40.32	46.74	46.38	52.69	Mar.	52.72	55.26	56.59	56.59	59.25	64.56
Apr.	23.25	23.25	20.61	22.61	23.61	24.61	Apr.	26.12	33.15	40.11	46.64	46.38	52.69	Apr.	52.72	55.26	56.59	56.59	60.29	64.56
May	23.25	23.25	20.61	22.61	23.61	24.61	May	26.45	33.15	40.33	45.97	46.38	52.69	May	52.77	55.26	56.59	56.59	60.29	64.56
June	23.25	22.98	20.61	22.61	23.61	24.61	June	28.13	33.15	40.51	45.91	46.38	52.69	June	52.77	55.32	56.59	56.59	60.29	64.56
July	23.25	19.61	20.61	22.61	23.61	24.61	July	28.13	34.52	42.25	45.91	46.38	52.69	July	53.27	56.73	56.59	58.46	60.33	65.37
Aug.	23.25	19.61	20.61	22.61	23.61	24.61	Aug.	28.13	38.64	44.34	45.91	46.58	52.69	Aug.	55.26	56.76	56.59	59.09	63.02	66.40
Sept.	23.25	19.82	21.61	22.61	23.61	24.61	Sept.	28.13	36.95	44.96	45.90	47.16	52.69	Sept.	55.26	56.86	56.59	59.09	63.04	66.42
Oct.	23.25	20.57	22.61	22.61	23.61	24.80	Oct.	28.13	36.95	46.63	45.88	49.29	52.72	Oct.	55.26	56.59	56.59	59.09	63.04	66.42
Nov.	23.25	20.61	22.61	22.61	23.61	25.37	Nov.	28.13	37.04	46.82	45.88	49.69	52.72	Nov.	55.26	56.59	56.59	59.09	63.04	66.42
Dec.	23.25	20.61	22.61	22.98	23.61	25.37	Dec.	28.64	37.06	46.82	45.88	52.50	52.72	Dec.	55.26	56.59	56.59	59.09	63.04	66.42
Average	22.74	21.67	21.19	22.64	23.58	24.61	Average	27.29	34.34	42.76	46.18	47.85	52.70	Average	53.83	55.96	56.59	57.78	61.15	65.15

* Price unchanged at \$23.61 from 1942 through 1944.

PRODUCTION OF PIG IRON AND FERROALLOYS, Net Tons

PIG IRON							FERROALLOYS*			
Year	Basic	Bessemer	Low Phosphorus	Foundry	Malleable	All Other, Including Direct Castings	Ferromang. and Spiegeleisen	Ferrosilicon	All Other Ferroalloys	Total Ferroalloys
1957†										2,600,000
1956	61,638,748	6,664,957	504,189	2,399,346	3,467,117	75,068,469	968,006	809,285	729,678	2,506,969
1955	62,484,889	7,436,354	263,036	2,754,641	3,531,420	76,857,417	955,174	803,281	647,993	2,406,448
1954	47,023,175	5,652,503	211,893	2,273,032	2,629,662	57,965,548	749,314	636,694	454,587	1,840,694
1953	59,882,512	8,110,881	297,065	2,509,996	3,794,458	74,901,429	1,007,248	772,339	569,152	2,346,739
1952	47,511,169	7,445,715	307,478	2,670,210	3,120,168	60,512,936	820,806	749,059	471,150	2,041,017
1951	54,212,909	9,045,954	314,725	3,050,626	3,363,369	70,274,278	865,805	919,085	389,378	2,174,265
1950	49,880,440	8,090,608	335,418	2,530,247	3,181,043	64,886,907	776,881	839,567	196,936	1,813,404
1949	40,905,356	7,059,418	301,520	2,503,912	2,409,438	53,412,562	675,029	687,322	161,672	1,504,223
1948	46,315,064	7,731,530	384,425	2,759,510	2,590,656	60,055,216	805,013	842,385	208,945	1,856,343
1947	44,804,743	7,182,207	331,118	2,953,405	2,874,752	58,328,912	800,725	802,970	184,706	1,788,407
1946	33,727,655	5,932,414	167,013	2,545,936	2,190,285	44,776,796	540,061	724,141	156,825	1,421,030
1945	39,896,962	8,255,513	314,063	2,248,887	2,350,076	53,223,169	706,078	817,849	171,933	1,695,860
1944	45,898,006	9,756,638	474,686	2,190,681	2,494,659	61,007,439	809,638	837,944	211,177	1,856,759
1943	45,374,682	10,258,788	536,832	2,059,501	2,393,241	60,610,670	803,623	923,450	232,204	1,959,277

* Including ferroalloys produced in electric furnaces.

† Iron Age estimate.

Source: American Iron and Steel Institute.

CANADIAN BLAST FURNACE PRODUCTION, Net Tons Including Ferroalloys

Year	Pig Iron	Ferroalloys	Total	Year	Pig Iron	Ferroalloys	Total	Year	Pig Iron	Ferroalloys	Total
1934	455,789	37,055	492,844	1942	1,975,015	213,636	2,188,651	1950	2,309,732	161,575	2,491,307
1935	678,302	61,182	740,484	1943	1,758,269	197,094	1,955,363	1951	2,552,896	250,930	2,803,826
1936	759,618	87,679	847,297	1944	1,852,628	171,323	2,023,951	1952	2,682,065	232,036	2,914,101
1937	1,006,717	91,931	1,098,648	1945	1,777,958	186,978	1,964,936	1953	3,012,269	196,595	3,162,864
1938	759,710	59,720	819,430	1946	1,403,750	116,995	1,520,745	1954	2,213,433	109,833	2,323,266
1939	846,418	85,531	931,949	1947	1,969,847	149,632	2,119,479	1955	3,213,764	166,882	3,380,646
1940	1,309,161	151,661	1,460,822	1948	2,120,909	250,659	2,371,568	1956	3,568,196	242,164	3,810,360
1941	1,528,054	213,218	1,741,272	1949	2,154,352	211,603	2,365,955	1957*	3,900,000	223,000	4,123,000

* Estimated.

Source: Dominion Bureau of Statistics.

Prices: Foundry iron at Buffalo, Chicago, Granite City, Valley and Birmingham . . . Basic iron Valley . . . Valley malleable.

PIG IRON

CHICAGO FOUNDRY PIG IRON

Per Gross Ton, at Furnace	1946	1947	1948	1949	1950	1951
Jan.	\$28.75	\$30.50	\$38.75	\$46.50	\$46.50	\$52.50
Feb.	28.75	30.50	39.00	46.50	46.50	52.50
Mar.	26.13	33.00	39.00	46.50	46.50	52.50
Apr.	26.50	33.00	39.00	46.50	46.50	52.50
May	26.50	33.00	39.00	46.50	46.50	52.50
June	23.50	33.00	39.00	46.50	46.50	52.50
July	28.50	34.20	42.00	46.50	46.50	52.50
Aug.	28.50	36.00	43.00	46.50	46.50	52.50
Sept.	28.50	36.00	43.00	46.50	46.50	52.50
Oct.	28.50	36.00	46.50	46.50	49.50	52.50
Nov.	28.50	36.00	46.50	46.50	49.50	52.50
Dec.	30.10	36.40	46.50	46.50	52.50	52.50
Average	27.64	34.80	41.77	46.50	47.58	52.50

	1952	1953	1954	1955	1956	1957
Jan.	\$52.50	\$55.00	\$56.50	\$56.50	\$59.00	\$63.00
Feb.	52.50	55.00	56.50	56.50	59.00	63.00
Mar.	52.50	55.00	56.50	56.50	59.00	65.00
Apr.	52.50	55.00	56.50	56.50	60.50	65.00
May	52.50	55.00	56.50	56.50	60.50	65.00
June	52.50	55.00	56.50	56.50	60.50	65.00
July	53.00	56.50	56.50	58.37	60.50	66.50
Aug.	55.00	56.50	56.50	59.00	61.13	66.50
Sept.	55.00	56.50	56.50	59.00	63.00	66.50
Oct.	55.00	56.50	56.50	59.00	63.00	66.50
Nov.	55.00	56.50	56.50	59.00	63.00	66.50
Dec.	55.00	56.50	56.50	59.00	63.00	66.50
Average	53.75	55.75	56.50	57.69	61.01	65.42

BUFFALO FOUNDRY PIG IRON

Per Gross Ton, at Furnace	1946	1947	1948	1949	1950	1951
Jan.	\$28.75	\$30.50	\$40.37	\$47.28	\$46.50	\$52.50
Feb.	28.75	30.50	42.12	47.00	46.50	52.50
Mar.	26.13	32.38	42.45	47.00	46.50	52.50
Apr.	26.50	33.00	41.49	46.75	46.50	52.50
May	26.50	33.00	41.37	46.50	46.50	52.50
June	28.50	33.00	41.44	46.50	46.50	52.50
July	28.50	34.20	42.08	46.50	46.50	52.50
Aug.	28.50	37.37	44.80	46.50	46.50	52.50
Sept.	28.50	37.18	43.87	46.50	47.25	52.50
Oct.	28.50	37.00	47.12	46.50	49.50	52.50
Nov.	28.50	37.75	47.50	46.50	49.50	52.50
Dec.	30.10	38.00	47.50	46.50	52.50	52.50
Average	27.64	34.49	43.65	46.67	47.56	52.50

	1952	1953	1954	1955	1956	1957
Jan.	\$52.50	\$55.00	\$56.50	\$56.50	\$59.00	\$63.00
Feb.	52.50	55.00	56.50	56.50	59.00	63.00
Mar.	52.50	55.00	56.50	56.50	59.00	65.00
Apr.	52.50	53.00	56.50	56.50	60.50	65.00
May	52.50	55.00	56.50	56.50	60.50	65.00
June	52.50	55.00	56.50	56.50	60.50	65.00
July	53.00	56.50	56.50	58.37	60.50	66.50
Aug.	55.00	56.50	56.50	59.00	62.00	66.50
Sept.	55.00	56.50	56.50	59.00	63.00	66.50
Oct.	55.00	56.50	56.50	59.00	63.00	66.50
Nov.	55.00	56.50	56.50	59.00	63.00	66.50
Dec.	55.00	56.50	56.50	59.00	63.00	66.50
Average	53.75	55.75	56.50	57.69	61.08	65.42

FOUNDRY PIG IRON PRICES

Mahoning, Shenango Valley, Per Gross Ton	1945	1946	1947	1948†	1950	1951
Jan.	\$24.00	\$25.75	\$30.50	\$39.37	\$46.50	\$52.50
Feb.	24.50	25.75	30.50	39.50	46.50	52.50
Mar.	25.00	26.13	33.50	39.50	46.50	52.50
Apr.	25.00	26.50	33.50	39.50	46.50	52.50
May	25.00	26.50	33.50	39.50	46.50	52.50
June	25.00	28.50	33.50	39.50	46.50	52.50
July	25.00	28.50	34.70	42.50	46.50	52.50
Aug.	25.00	28.50	38.50	43.50	46.50	52.50
Sept.	25.00	28.50	38.50	43.50	47.50	52.50
Oct.	25.30	28.50	36.50	46.12	49.50	52.50
Nov.	25.75	28.50	36.50	46.50	49.50	52.50
Dec.	25.75	30.10	36.70	46.50	52.12	52.50
Average	25.02	27.64	34.36	42.12	47.58	52.50

	1952	1953	1954	1955	1956	1957
Jan.	\$52.50	\$55.00	\$56.50	\$56.50	\$59.00	\$63.00
Feb.	52.50	55.00	56.50	56.50	59.00	63.00
Mar.	52.50	55.00	56.50	56.50	59.00	65.00
Apr.	52.50	55.00	56.50	56.50	60.50	65.00
May	52.50	55.00	56.50	56.50	60.50	65.00
June	52.50	55.00	56.50	56.50	60.50	65.00
July	53.00	56.50	56.50	58.37	60.50	66.50
Aug.	55.00	56.50	56.50	59.00	63.00	66.50
Sept.	55.00	56.50	56.50	59.00	63.00	66.50
Oct.	55.00	56.50	56.50	59.00	63.00	66.50
Nov.	55.00	56.50	56.50	59.00	63.00	66.50
Dec.	55.00	56.50	56.50	59.00	63.00	66.50
Average	53.75	55.75	56.50	57.69	61.17	65.42

† Price unchanged at \$46.50 through 1949.

GRANITE CITY, ILL., PIG IRON

Foundry, Gross Ton, at Furnace	1946	1947	1948	1949	1950	1951
Jan.	\$28.75	\$30.50	\$39.25	\$48.40	\$48.40	\$54.40
Feb.	28.75	30.50	40.00	48.40	48.40	54.40
Mar.	26.13	32.00	40.00	48.40	48.40	54.40
Apr.	26.50	33.50	40.00	48.40	48.40	54.40
May	26.50	33.50	41.43	48.40	48.40	54.40
June	28.50	33.50	45.75	48.40	48.40	54.40
July	28.50	34.60	45.75	48.40	48.40	54.40
Aug.	28.50	36.63	47.34	48.40	48.40	54.40
Sept.	28.50	37.00	48.40	48.40	48.40	54.40
Oct.	28.50	37.00	48.40	48.40	51.40	54.40
Nov.	28.50	37.00	48.40	48.40	51.40	54.40
Dec.	29.70	37.00	48.40	48.40	53.65	54.40
Average	27.44	34.39	44.42	48.40	49.34	54.40

	1952	1953	1954	1955	1956	1957
Jan.	\$54.40	\$56.90	\$58.40	\$58.40	\$60.90	\$64.90
Feb.	54.40	56.90	58.40	58.40	60.90	64.90
Mar.	54.40	56.90	58.40	58.40	62.40	66.90
Apr.	54.40	56.90	58.40	58.40	62.40	66.90
May	54.40	56.90	58.40	58.40	62.40	66.90
June	54.40	56.90	58.40	58.40	62.40	66.90
July	54.90	58.40	58.40	60.27	62.40	68.40
Aug.	56.90	58.40	58.40	60.90	64.90	68.40
Sept.	56.90	58.40	58.40	60.90	64.90	68.40
Oct.	56.90	58.40	58.40	60.90	64.90	68.40
Nov.	56.90	58.40	58.40	60.90	64.90	68.40
Dec.	56.90	58.40	58.40	60.90	64.90	68.40
Average	55.48	57.85	58.40	59.59	63.07	67.32

BIRMINGHAM PIG IRON PRICES

Foundry Grade, Per Gross Ton	1946	1947	1948	1949	1950	1951
Jan.	\$22.13	\$22.13	\$37.38	\$43.38	\$39.38	\$48.88
Feb.	22.13	26.88	37.38	43.38	42.38	48.88
Mar.	22.88	29.13	37.38	43.38	42.38	48.88
Apr.	22.88	29.88	37.38	43.38	42.38	48.88
May	22.88	29.88	38.38	39.71	42.38	48.88
June	24.88	29.88	39.38	39.38	42.38	48.88
July	24.88	31.28	31.04	39.38	42.38	48.88
Aug.	24.88	34.13	43.38	39.38	42.38	48.88
Sept.	24.88	34.88	43.38	39.38	42.67	48.88
Oct.	24.88	34.88	43.38	39.38	45.88	48.88
Nov.	24.88	34.88	43.38	39.38	45.88	48.88
Dec.	26.88	34.00	43.38	39.38	48.88	48.88
Average	24.06	31.43	40.43	40.74	43.53	48.88

	1952	1953	1954	1955	1956	1957
Jan.	\$48.88	\$51.38	\$52.88	\$52.88	\$55.00	\$59.00
Feb.	48.88	51.38	52.88	52.88	55.00	59.00
Mar.	48.88	51.38	52.88	52.88	55.00	59.00
Apr.	48.88	51.38	52.88	52.88	55.00	59.00
May	48.88	51.38	52.88	52.88	55.00	59.00
June	48.88	51.38	52.88	52.88	55.00	59.00
July	49.38	52.88	52.88	54.47	57.67	62.50
Aug.	51.38	52.88	52.88	55.00	58.65	62.50
Sept.	51.38	52.88	52.88	55.00	59.00	62.50
Oct.	51.38	52.88	52.88	55.00	59.00	62.50
Nov.	51.38	52.88	52.88	55.00	59.00	62.50
Dec.	51.38	52.88	52.88	55.00	59.00	62.50
Average	49.96	52.13	52.88	53.89	56.86	60.75

BASIC PIG IRON, VALLEY

Mahoning, Shenango Valley, Gross Ton						
	1945*	1946	1947	1948†	1950	1951
Jan.	\$23.50	\$25.25	\$30.00	\$38.87	\$46.00	\$52.00
Feb.	24.00	25.25	30.00	39.00	46.00	52.00
Mar.	24.50	25.63	33.00	39.00	46.00	52.00
Apr.	24.50	26.00	33.00	39.00	46.00	52.00
May	24.50	26.00	33.00	39.00	46.00	52.00
June	24.50	28.00	33.00	39.00	46.00	52.00
July	24.50	28.00	34.20	42.00	46.00	52.00
Aug.	24.50	28.00	36.00	43.00	46.00	52.00
Sept.	24.50	28.00	36.00	43.00	46.75	52.00
Oct.	24.80	28.00	36.00	45.62	49.00	52.00
Nov.	25.25	28.00	36.00	46.00	49.00	52.00
Dec.	25.25	29.60	36.20	46.00	51.62	52.00
Average	24.52	27.14	34.78	41.62	47.03	52.00

	1952	1953	1954	1955	1956	1957
Jan.	\$82.00	\$84.50	\$86.00	\$86.00	\$88.50	\$92.50
Feb.	52.00	54.50	56.00	56.00	58.50	62.50
Mar.	52.00	54.50	56.00	56.00	58.50	64.50
Apr.	52.00	54.50	56.00	56.00	60.00	64.50
May	52.00	54.50	56.00	56.00	60.00	64.50
June	52.00	54.50	56.00	56.00	60.00	64.50
July	52.50	56.00	56.00	57.87	60.00	66.00
Aug.	54.50	56.00	56.00	58.50	62.50	66.00
Sept.	54.50	56.00	56.00	58.50	62.50	66.00
Oct.	54.50	56.00	56.00	58.50	62.50	66.00
Nov.	54.50	56.00	56.00	58.50	62.50	66.00
Dec.	54.50	56.00	56.00	58.50	62.50	66.00
Average	53.08	55.25	56.00	57.19	60.67	64.92

IRON ORE

LAKE SUPERIOR IRON ORE

Avg. Analyses, Combined Ranges, Grades

Year	Analyses, Pct				
	Iron, Natural	Phos.	Silica	Mang.	Moisture
1956	51.34	0.090	9.78	0.67	10.39
1955	50.53	0.089	10.11	0.72	10.81
1954	50.56	0.085	10.22	0.70	10.47
1953	50.37	0.090	10.25	0.75	10.90
1952	50.49	0.111	10.05	0.77	10.78
1951	50.25	0.090	9.87	0.77	11.22
1950	50.38	0.092	9.85	0.77	11.11
1949	50.39	0.096	9.72	0.78	11.12
1948	50.49	0.093	9.30	0.76	11.35
1947	50.91	0.093	9.09	0.75	11.28
1946	51.32	0.087	8.83	0.74	11.22
1945	51.69	0.089	8.52	0.72	10.96
1944	51.72	0.088	8.42	0.74	11.02
1943	51.58	0.091	8.32	0.82	11.06
1942	51.65	0.089	8.21	0.79	10.98
1941	51.83	0.085	8.18	0.78	11.01
1940	52.09	0.085	8.00	0.77	10.93

Source: American Iron Ore Assn.

LAKE SHIPMENTS OF IRON ORE

Lake Superior Shipments, Gross Tons

1939	44,984,000
1940	53,308,000
1941	79,941,000
1942	92,070,000
1943	85,116,000
1944	81,039,000
1945	75,207,000
1946	58,975,000
1947	77,210,278
1948	82,655,757
1949	89,556,269
1950	78,205,592
1951	89,092,012
1952	74,810,796
1953	95,844,449
1954	60,793,697
1955	87,459,853
1956	73,389,972
1957*	84,000,000

* Estimate.

Source: American Iron Ore Assn.

Prices: Lake Superior ore, foundry and furnace coke . . . Iron ore analyses, ore shipments and prices for various grades.

U. S. IRON ORE CONSUMPTION

In Long Tons

1947	96,115,549
1946	100,498,557
1945	91,123,220
1944	106,610,273
1943	114,537,112
1942	100,840,526
1941	122,124,661
1940	96,800,000
1939	114,989,933
1938	119,670,000
1937*	129,500,000

* Estimate by The Iron Age.

Source: U. S. Bureau of Mines.

CONNELLVILLE FOUNDRY COKE

Net Ton at Oven, Monthly Review

	1946	1947	1948	1949	1950	1951
Jan.	\$9.00	\$8.50	\$14.00	\$16.94	\$15.75	\$17.25
Feb.	9.00	8.35	14.00	16.75	15.75	17.25
Mar.	9.00	10.28	14.00	16.50	16.25	17.50
Apr.	9.00	10.85	14.00	16.50	15.25	17.75
May	9.00	11.25	14.00	16.38	16.25	17.75
June	9.00	11.25	16.50	16.25	16.25	17.75
July	8.68	12.75	16.50	16.13	16.25	17.75
Aug.	8.50	13.75	17.00	15.75	16.25	17.75
Sept.	8.50	13.75	17.00	15.75	16.25	17.75
Oct.	8.50	13.94	17.00	15.75	16.75	17.75
Nov.	8.50	14.00	17.00	15.75	16.75	17.75
Dec.	8.50	14.00	17.00	15.75	17.12	17.75
Average	8.65	11.96	15.82	16.18	16.32	17.65

	1952	1953	1954	1955	1956	1957
Jan.	\$17.75	\$17.75	\$16.75	\$16.75	\$16.25	\$18.25
Feb.	17.75	17.75	16.75	16.75	16.25	18.25
Mar.	17.75	17.63	16.75	16.75	16.25	18.25
Apr.	17.75	17.25	16.75	16.75	17.50	18.25
May	17.75	17.25	16.75	16.35	17.50	18.25
June	17.75	17.25	16.75	16.25	17.50	18.25
July	17.75	17.25	16.75	16.25	17.50	18.25
Aug.	17.75	17.25	16.75	16.25	17.50	18.25
Sept.	17.75	16.98	16.75	16.25	17.50	18.25
Oct.	17.75	16.75	16.75	16.25	17.50	18.25
Nov.	17.75	16.75	16.75	16.25	16.25	18.25
Dec.	17.75	16.75	16.75	16.25	16.25	18.25
Average	17.75	17.22	16.75	16.42	17.31	18.25

LAKE SUPERIOR IRON ORE PRICES Per Gross Ton at Lower Lake Ports

BESSEMER ORES

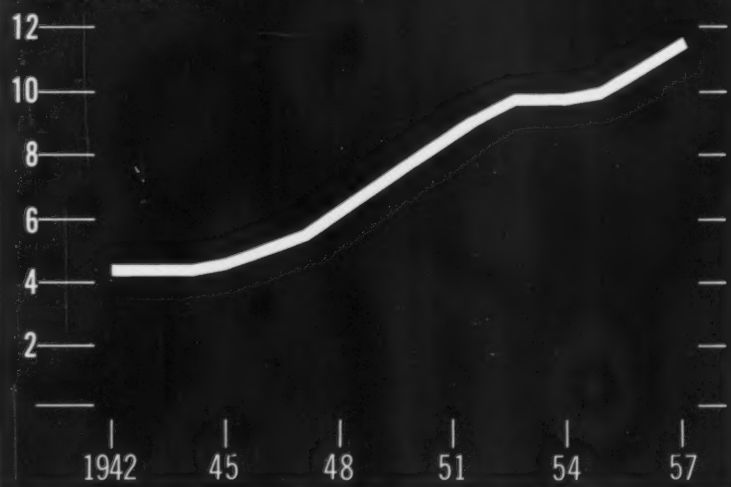
	Guarantee		Price	
	Iron Natural	Phosphorus Dry	Old Range	Mesabi
1940-Apr. 16 on	51.50	0.045	4.75	4.80
1941 through 1944	51.50	0.045	4.75	4.80
1945 to June 24, 1946	51.50	0.045	4.95	4.70
1946 June 24 to Dec. 31	51.50	0.045	5.45	5.20
1947 to Apr. 1, 1948	51.50	0.045	5.95	5.70
1948 Apr. 1 on	51.50	0.045	6.60	6.35
1949	51.50	0.045	7.60	7.35
1950-Feb. 1 to Dec. 1	51.50	0.045	8.10	7.85
1950-Dec. 1 on	51.50	0.045	8.70	8.45
1951	51.50	0.045	8.70	8.45
1952 to July 25	51.50	0.045	8.70	8.45
1952 July 26 on	51.50	0.045	9.45	9.20
1953 to June 30	51.50	0.045	10.10	9.85
1953 July 1 on	51.50	0.045	10.30	10.05
1954	51.50	0.045	10.30	10.05
1955	51.50	0.045	10.40	10.25
1956	51.50	0.045	11.25	11.00
1957	51.50	0.045	11.85	11.60

NON-BESSEMER

	Guarantee		Price	
	Iron Natural	Old Range	Mesabi	High Phosphorus
1940-Apr. 16 on	51.50	4.80	4.45	4.35
1941 through 1944	51.50	4.80	4.45	4.35
1945 to June 24, 1946	51.50	4.80	4.55	4.55
1946 June 24 to Dec. 31	51.50	5.30	5.05	5.05
1947 to Apr. 1, 1948	51.50	5.80	5.55	5.55
1948 Apr. 1 on	51.50	6.45	6.20	6.20
1949	51.50	7.45	7.20	7.20
1950-Feb. 1 to Dec. 1	51.50	7.95	7.70	7.70
1950-Dec. 1 on	51.50	8.55	8.30	8.30
1951	51.50	8.55	8.30	8.30
1952 to July 25	51.50	8.55	8.30	8.30
1952 July 26 on	51.50	9.30	9.05	9.05
1953 to June 30	51.50	9.95	9.70	9.70
1953 July 1 on	51.50	10.15	9.90	9.90
1954	51.50	10.15	9.90	9.90
1955	51.50	10.25	10.10	10.00
1956	51.50	11.10	10.85	10.85
1957	51.50	11.70	11.45	11.45

IRON ORE

Dollars per Gross Ton



CONNELLVILLE FURNACE COKE

Net Ton at Oven, Monthly Review

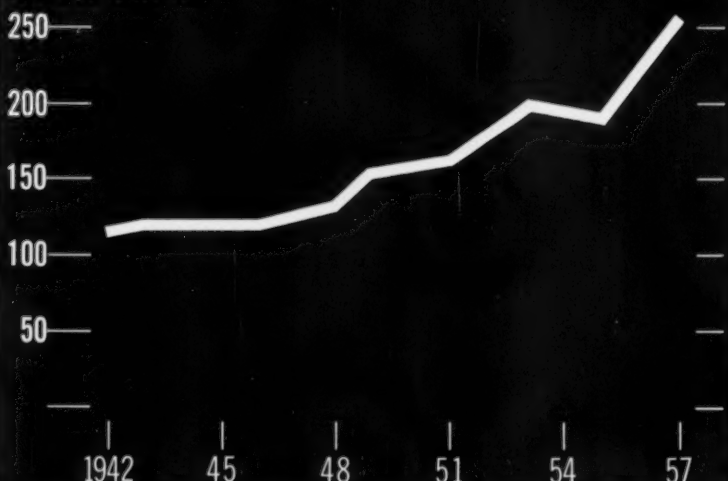
	1946	1947	1948	1949	1950	1951
Jan.	\$7.50	\$8.75	\$12.50	\$16.50	\$14.00	\$14.25
Feb.	7.50	8.88	12.50	15.25	14.50	14.25
Mar.	7.50	9.00	12.50	14.50	14.13	14.50
Apr.	7.50	9.60	12.50	14.50	14.25	14.75
May	7.50	10.50	12.50	14.38	14.25	14.75
June	7.50	10.50	12.70	14.25	14.25	14.75
July	8.50	11.40	13.88	14.25	14.25	14.75
Aug.	8.75	12.00	14.75	14.25	14.25	14.75
Sept.	8.75	12.00	15.00	14.25	14.25	14.75
Oct.	8.75	12.38	15.00	14.25	14.25	14.75
Nov.	8.75	12.50	15.00	14.20	14.25	14.75
Dec.	8.75	12.50	15.00	14.00	14.25	14.75
Average	8.10	10.83	13.63	14.58	14.20	14.65

	1952	1953	1954	1955	1956	1957
Jan.	\$14.75	\$14.75	\$14.38	\$14.38	\$14.25	\$15.38
Feb.	14.75	14.75	14.38	14.38	14.25	15.38
Mar.	14.75	14.75	14.38	14.38	14.25	15.38
Apr.	14.75	14.75	14.38	13.34	14.50	15.38
May	14.75	14.75	14.38	13.15	14.50	15.38
June	14.75	14.75	14.38	13.25	14.50	15.38
July	14.75	14.75	14.38	13.25	14.50	15.38
Aug.	14.75	14.75	14.38	13.25	14.82	15.38
Sept.	14.75	14.53	14.38	13.25	14.82	15.38
Oct.	14.75	14.38	14.38	13.25	14.82	15.38
Nov.	14.75	14.38	14.38	14.25	15.28	15.38
Dec.	14.75	14.38	14.38	14.25	15.50	15.38
Average	14.75	14.64	14.38	13.69	14.62	15.38

FERROMANGANESE PRICES

Dollars per Gross Ton

Eastern Furnaces



FERROMANGANESE

Eastern Producers, Carloads, Cents Per Lb

	1939	1940*	1942**	1947**	1948†	1949	1950	1951	1952	1953‡	1954‡	1955	1956	1957
Jan.	3.79	4.46	5.36	6.03	6.47	7.21	7.74	8.27	8.31	10.10	10.00	9.50	10.25	12.75
Feb.	3.57	4.46	5.36	6.03	6.47	7.21	7.74	8.31	8.31	10.10	10.00	9.50	10.25	12.75
Mar.	3.57	4.46	5.36	6.03	6.47	7.21	7.74	8.31	8.31	10.10	10.00	9.50	10.25	12.75
Apr.	3.57	4.46	5.36	6.03	6.47	7.21	7.74	8.31	8.31	10.00	10.00	9.50	10.65	12.75
May	3.57	4.46	6.03	6.03	6.47	7.74	7.74	8.31	8.31	10.12	10.00	9.50	10.75	12.95
June	3.57	4.91	6.03	6.03	6.47	7.74	7.74	8.31	8.31	10.00	10.00	9.50	10.75	12.75
July	3.57	5.36	6.03	6.03	6.47	7.74	7.74	8.31	8.31	10.00	10.00	9.50	10.75	12.75
Aug.	3.57	5.36	6.03	6.03	6.47	7.74	7.74	8.31	9.65	10.00	10.00	9.50	10.75	12.75
Sept.	4.24	5.36	6.03	6.03	6.47	7.74	7.74	8.31	10.00	10.00	9.50	9.50	11.25	12.50
Oct.	4.46	5.36	6.03	6.47	7.23	7.74	7.74	8.31	10.00	10.00	9.50	9.50	11.75	12.25
Nov.	4.46	5.36	6.03	6.47	7.23	7.74	7.97	8.31	10.00	10.00	9.50	9.50	11.75	12.25
Dec.	4.46	5.36	6.03	6.47	7.23	7.74	8.09	8.31	10.00	10.00	9.50	10.25	12.00	12.25
Average	3.67	4.95	5.80	6.14	6.56	7.64	7.79	8.31	9.02	10.04	9.83	10.91	10.94	12.60

† Seaboard price prior to Oct. 7, 1948. ‡ Starting June, 1953, prices reflect new standard of 74 to 76 pct Mn. Prices prior to that converted from older gross ton pricing method and were based on standard of 78-82 pct Mn. * Price unchanged at 5.36¢ through 1941. ** Price unchanged at 6.03¢ from 1943 through 1948.

50 PCT FERROSILICON

Cents per lb contained Si, Carloads, Delivered*

	1952	1953	1954	1955	1956	1957
Jan.	12.40	12.40	12.40	12.00	12.75	13.90
Feb.	12.40	12.40	12.40	12.00	12.75	13.90
Mar.	12.40	12.40	12.40	12.00	12.75	13.00
Apr.	12.40	12.40	10.80	11.00	12.75	13.00
May	12.40	12.40	10.80	11.00	12.75	13.00
June	12.40	12.40	10.80	11.00	12.75	13.00
July	12.40	12.40	10.80	11.00	12.75	13.00
Aug.	12.40	12.40	10.80	11.00	12.75	13.00
Sept.	12.40	12.40	11.52	11.00	13.15	13.00
Oct.	12.40	12.40	12.00	11.75	13.50	13.00
Nov.	12.40	12.40	12.00	11.75	13.50	13.00
Dec.	12.40	12.40	12.00	11.75	13.90	13.00
Average	12.40	12.40	11.56	11.43	12.00	13.15

* F.o.b. shipping point after Oct. 1, 1955.

CHEM. BONDED CHROME BRICK

F.o.b. Baltimore, Dollars per Net Ton

	1951	1952	1953	1954	1955	1956	1957
Jan.	\$82.00	\$82.00	\$86.00	\$86.00	\$86.00	\$91.00	\$98.00
Feb.	82.00	82.00	86.00	86.00	86.00	91.00	98.00
Mar.	82.00	82.00	86.00	86.00	86.00	91.00	98.00
Apr.	82.00	86.00	86.00	86.00	86.00	91.00	105.00
May	82.00	86.00	86.00	86.00	86.00	91.00	105.00
June	82.00	86.00	86.00	86.00	86.00	91.00	105.00
July	82.00	82.00	86.00	86.00	86.00	91.00	105.00
Aug.	82.00	82.00	86.00	86.00	86.00	98.00	105.00
Sept.	82.00	82.00	86.00	86.00	86.00	98.00	105.00
Oct.	82.00	86.00	86.00	86.00	86.00	98.00	105.00
Nov.	82.00	86.00	86.00	86.00	91.00	98.00	105.00
Dec.	82.00	86.00	86.00	86.00	91.00	98.00	105.00
Average	82.00	83.00	86.00	86.00	86.83	93.92	103.25

CHEM. BONDED MAGNESITE BRICK

F.o.b. Baltimore, Dollars per Net Ton

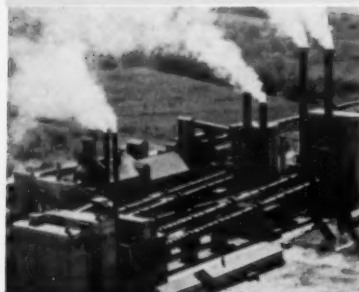
	1951	1952	1953	1954	1955	1956	1957
Jan.	\$93.00	\$93.00	\$97.50	\$97.50	\$97.50	\$102.00	\$109.00
Feb.	93.00	93.00	97.50	97.50	97.50	102.00	109.00
Mar.	93.00	93.00	97.50	97.50	97.50	102.00	109.00
Apr.	93.00	93.00	97.50	97.50	97.50	102.00	116.00
May	93.00	93.00	97.50	97.50	97.50	102.00	116.00
June	93.00	93.00	97.50	97.50	97.50	102.00	116.00
July	93.00	93.00	97.50	97.50	97.50	102.00	116.00
Aug.	93.00	93.00	97.50	97.50	97.50	109.00	116.00
Sept.	93.00	93.00	97.50	97.50	97.50	109.00	116.00
Oct.	93.00	97.50	97.50	97.50	97.50	109.00	116.00
Nov.	93.00	97.50	97.50	97.50	102.00	109.00	116.00
Dec.	93.00	97.50	97.50	97.50	102.00	109.00	116.00
Avg.	93.00	94.13	97.50	97.50	98.59	104.92	114.25

SILICA BRICK STANDARD GRADE

Mt. Union, Pa., Ensley, Ala., Carloads per 1000 Brick, F.o.b. plant

	1952	1953	1954	1955	1956	1957
Jan.	\$94.60	\$99.30	\$115.00	\$120.00	\$128.00	\$150.00
Feb.	94.60	99.30	115.00	120.00	128.00	140.00
Mar.	94.60	99.30	115.00	120.00	128.00	140.00
Apr.	94.60	99.30	115.00	120.00	128.00	150.00
May	94.60	99.30	115.00	120.00	128.00	150.00
June	94.60	99.30	115.00	120.00	128.00	150.00
July	94.60	99.30	115.00	124.00	128.00	150.00
Aug.	94.60	99.30	115.00	128.00	140.00	150.00
Sept.	94.60	108.72	119.00	128.00	140.00	150.00
Oct.	99.30	115.00	120.00	128.00	140.00	150.00
Nov.	99.30	115.00	120.00	128.00	140.00	150.00
Dec.	99.30	115.00	120.00	128.00	140.00	150.00
Average	95.76	103.01	116.58	123.96	133.00	147.50

Ferroalloys Furnace Bricks



SPIEGELLEISEN, 19 TO 21 PCT.

Palmerton, Pa., Carloads, Gross Ton

	1952	1953	1954	1955	1956	1957
Jan.	\$75.00	\$85.00	\$86.00	\$86.00	\$91.50	\$102.50
Feb.	75.00	85.00	86.00	86.00	91.50	102.50
Mar.	75.00	85.00	86.00	86.00	91.50	102.50
Apr.	75.00	85.00	86.00	86.00	94.00	102.50
May	75.00	85.00	86.00	86.00	94.00	102.50
June	75.00	86.00	86.00	86.00	94.00	102.50
July	75.00	86.00	86.00	86.00	94.00	102.50
Aug.	82.50	86.00	86.00	86.00	96.00	102.50
Sept.	85.00	86.00	86.00	86.00	96.00	102.50
Oct.	85.00	86.00	86.00	87.50	99.50	102.50
Nov.	85.00	86.00	86.00	88.00	99.50	102.50
Dec.	85.00	86.00	86.00	88.00	99.50	102.50
Average	78.96	85.58	86.00	86.45	95.08	102.50

BURNED MAGNESITE BRICK

F.o.b. Baltimore, Dollars per Net Ton

	1951	1952	1953	1954	1955	1956	1957
Jan.	\$104.00	\$104.00	\$109.00	\$109.00	\$109.00	\$114.00	\$121.00
Feb.	104.00	104.00	109.00	109.00	109.00	114.00	121.00
Mar.	104.00	104.00	109.00	109.00	109.00	114.00	121.00
Apr.	104.00	104.00	109.00	109.00	109.00	114.00	131.00
May	104.00	104.00	109.00	109.00	109.00	114.00	131.00
June	104.00	104.00	109.00	109.00	109.00	114.00	131.00
July	104.00	104.00	109.00	109.00	109.00	114.00	131.00
Aug.	104.00	104.00	109.00	109.00	109.00	121.00	131.00
Sept.	104.00	104.00	109.00	109.00	109.00	121.00	131.00
Oct.	104.00	109.00	109.00	109.00	109.00	121.00	131.00
Nov.	104.00	109.00	109.00	109.00	114.00	121.00	131.00
Dec.	104.00	109.00	109.00	109.00	114.00	121.00	131.00
Avg.	104.00	105.25	109.00	109.00	109.83	116.92	128.50

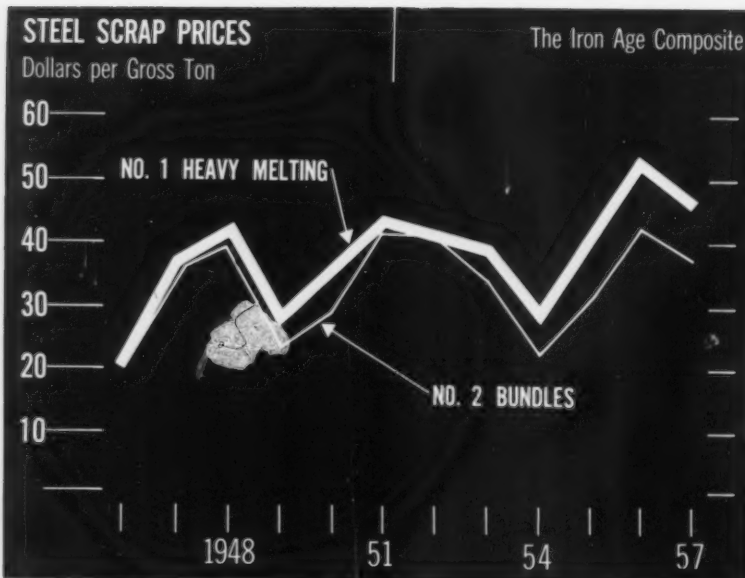
FIRST QUALITY FIRE CLAY BRICK

Pa.,* Ky., Mo., Ill., Md., Ohio, F.o.b. Plant**

	1951	1952	1953	1954	1955	1956	1957
Jan.	\$94.60	\$94.60	\$99.30	\$109.00	\$114.00	\$122.00	\$128.00
Feb.	94.60	94.60	99.30	109.00	114.00	122.00	128.00
Mar.	94.60	94.60	99.30	109.00	114.00	122.00	128.00
Apr.	94.60	94.60	99.30	109.00	114.00	122.00	135.00
May	94.60	94.60	99.30	109.00	114.00	122.00	135.00
June	94.60	94.60	99.30	109.00	114.00	122.00	135.00
July	94.60	94.60	99.30	109.00	118.00	122.00	135.00
Aug.	94.60	94.60	99.30	109.00	122.00	128.00	135.00
Sept.	94.60	94.60	105.12	113.00	122.00	128.00	135.00
Oct.	94.60	99.30	109.00	114.00	122.00	128.00	135.00
Nov.	94.60	99.30	109.00	114.00	122.00	128.00	135.00
Dec.	94.60	99.30	109.00	114.00	122.00	128.00	135.00
Avg.	94.60	95.78	102.21	110.58	116.66	124.50	133.25

* Add \$5.00 for Salina, Pa., after May, 1949.

** Carloads per 1000 brick.



**Average of Iron Age Scrap Prices.
Pittsburgh, Chicago, Philadelphia
Per Gross Ton**

No. 1 Heavy Melting

	1952	1953	1954	1955	1956	1957
Jan.	\$42.00	\$42.00	\$28.67	\$34.62	\$52.33	\$59.37
Feb.	42.00	42.92	25.92	36.16	48.75	53.17
Mar.	42.00	44.15	23.83	37.27	49.43	48.50
Apr.	42.00	41.75	25.38	36.50	54.88	42.80
May	42.00	38.59	27.79	34.48	51.17	46.17
June	41.37	40.97	27.88	34.95	45.08	54.23
July	40.10	44.00	26.87	39.50	46.42	54.00
Aug.	42.00	43.46	28.33	43.96	56.10	52.96
Sept.	42.00	36.53	29.71	44.25	58.58	47.29
Oct.	42.00	32.67	32.83	44.75	56.80	37.37
Nov.	42.00	35.21	33.40	45.47	61.67	32.83
Dec.	42.00	31.33	32.46	50.42	64.59	32.33*
Average	41.79	39.52	28.58	40.19	53.82	46.75*

No. 2 Bundles

	1952	1953	1954	1955	1956	1957
Jan.	\$41.83	\$41.83	\$23.25	\$26.33	\$43.28	\$47.43
Feb.	41.83	41.25	20.67	27.46	40.13	44.04
Mar.	41.83	40.68	18.38	28.83	40.03	39.58
Apr.	41.83	37.13	19.73	27.17	43.88	34.75
May	41.83	31.72	22.25	25.67	39.73	38.07
June	40.69	33.04	21.63	26.07	35.08	45.84
July	38.27	36.83	20.54	30.46	36.42	44.88
Aug.	41.83	35.89	21.25	35.17	44.40	43.17
Sept.	41.83	31.19	22.42	35.77	46.50	37.13
Oct.	41.83	26.07	25.79	36.13	44.88	27.80
Nov.	41.83	29.50	26.27	35.73	48.33	24.66
Dec.	41.83	25.83	25.07	41.32	51.63	24.20*
Average	41.44	34.25	22.27	31.34	42.86	37.63*

* Estimate.

CHICAGO

Prices of No. 1 Scrap, Per Gross Ton

	1952	1953	1954	1955	1956	1957
Jan.	\$41.50†	\$41.50†	\$28.13	\$34.50	\$50.10	\$57.90
Feb.	41.50†	42.50	25.50	34.00	46.63	49.00
Mar.	41.50†	43.50	24.50	34.90	48.00	44.00
Apr.	41.50†	39.88	28.13	35.50	54.00	39.50
May	41.50†	36.25	30.38	32.90	50.50	42.00
June	40.75	39.30	31.40	32.45	44.00	51.10
July	39.30	43.38	28.88	38.00	44.50	51.75
Aug.	41.50†	42.25	29.50	40.90	55.50	52.63
Sept.	41.50†	34.40	30.00	41.75	59.00	46.50
Oct.	41.50†	31.00	33.75	43.25	56.90	36.50
Nov.	41.50†	33.88	33.30	43.70	62.50	31.75
Dec.	41.50†	31.00	33.00	48.13	65.00	30.50*
Average	41.25	38.24	29.71	36.48	53.05	44.43*

No. 2 Bundles

	1952	1953	1954	1955	1956	1957
Jan.	\$41.50†	\$41.50†	\$21.75	\$24.50	\$40.13	\$44.40
Feb.	41.50†	41.00	19.75	24.50	37.75	39.75
Mar.	41.50†	39.91	17.88	24.50	37.30	37.50
Apr.	41.50†	37.00	19.40	24.50	41.50	34.00
May	41.50†	32.13	22.25	23.13	36.80	34.80
June	39.69†	33.13	21.88	23.60	32.75	42.13
July	37.10†	36.00	20.38	27.13	34.00	41.50
Aug.	41.50†	34.00	21.75	31.50	43.10	40.80
Sept.	41.50†	27.75	21.75	31.90	44.75	33.88
Oct.	41.50†	23.70	24.38	33.38	42.25	23.70
Nov.	41.50†	27.25	23.56	34.19	46.00	20.25
Dec.	41.50†	24.10	23.50	39.95	50.25	19.50*
Average	40.98	33.12	21.52	28.56	40.55	34.35*

† OPS basing point price ceiling.
* Estimate.

PHILADELPHIA

Prices of No. 1 Scrap, Per Gross Ton

	1952	1953	1954	1955	1956	1957
Jan.	\$41.50†	\$41.50†	\$27.63	\$32.87	\$54.10	\$59.50
Feb.	41.50†	42.50	25.00	37.00	50.63	57.00
Mar.	41.50†	44.30	22.10	38.40	50.40	52.75
Apr.	41.50†	42.75	21.50	37.00	54.63	46.88
May	41.50†	40.50	22.75	35.60	53.30	50.25
June	40.50	41.50	22.75	38.50	46.75	56.10
July	40.65	43.69	23.25	40.50	48.25	54.00
Aug.	41.50†	43.38	26.00	45.50	56.80	51.25
Sept.	41.50†	35.90	28.13	45.75	58.38	46.38
Oct.	41.50†	31.50	30.75	46.50	56.80	37.70
Nov.	41.50†	34.50	32.70	47.10	59.25	33.75
Dec.	41.50†	29.90	31.38	51.00	62.50	34.00*
Average	41.35	39.33	26.16	41.31	54.23	48.30*

No. 2 Bundles

	1952	1953	1954	1955	1956	1957
Jan.	\$41.00†	\$41.00†	\$22.75	\$26.00	\$45.50	\$49.40
Feb.	41.00†	40.00†	20.00	28.50	41.63	47.63
Mar.	41.00†	40.63	17.25	30.80	40.10	42.25
Apr.	41.00†	36.50	17.50	28.50	44.13	36.00
May	41.00†	30.63	18.50	27.13	42.30	39.50
June	39.50†	31.00	18.00	27.50	36.00	48.13
July	38.50†	34.00	17.75	31.75	37.25	46.38
Aug.	41.00†	34.69	18.50	36.50	44.50	43.00
Sept.	41.00†	31.81	21.00	38.50	47.25	37.50
Oct.	41.00†	26.10	25.50	37.50	45.63	28.50
Nov.	41.00†	29.50	27.75	37.25	49.10	24.75
Dec.	41.00†	26.50	25.80	42.50	52.13	24.60*
Average	40.67	33.53	21.11	32.70	43.79	38.97*

† OPS basing point price ceiling.

PITTSBURGH

Prices of No. 1 Scrap, Per Gross Ton

	1952	1953	1954	1955	1956	1957
Jan.	\$43.00†	\$43.00†	\$30.25	\$36.50	\$52.50	\$60.70
Feb.	43.00†	43.75	27.25	37.50	49.00	53.50
Mar.	43.00†	44.75	24.80	38.50	49.80	46.75
Apr.	43.00†	42.63	26.50	37.00	56.00	42.00
May	43.00†	39.00	30.25	34.70	49.70	46.25
June	42.90	42.10	29.50	35.25	44.50	55.50
July	40.45	46.75	26.50	40.00	46.50	56.25
Aug.	43.00†	44.75	29.50	45.00	57.00	55.00
Sept.	43.00†	39.30	31.00	44.50	56.38	49.00
Oct.	43.00†	35.50	34.00	44.50	56.70	37.90
Nov.	43.00†	37.25	34.20	45.80	63.25	33.00
Dec.	43.00†	33.10	33.80	51.13	66.25	32.50*
Average	42.78	40.99	29.90	40.87	54.14	47.53*


No. 2 Bundles

	1952	1953	1954	1955	1956	1957
Jan.	\$43.00†	\$43.00†	\$25.25	\$28.50	\$44.25	\$48.50
Feb.	43.00†	42.75†	22.25	29.38	41.00	44.75
Mar.	43.00†	41.80	20.00	31.20	42.70	39.00
Apr.	43.00†	37.90	22.30	28.50	46.00	34.25
May	43.00†	32.40	25.00	26.75	40.10	39.90
June	42.88†	35.00	25.00	27.10	36.50	47.25
July	39.20†	40.50	23.50	32.50	38.00	46.75
Aug.	43.00†	39.00	23.50	37.50	45.80	45.70
Sept.	43.00†	34.00	24.50	36.90	47.50	40.00
Oct.	43.00†	28.40	27.50	37.50	46.75	31.30
Nov.	43.00†	31.75	27.50	38.75	49.90	29.00
Dec.	43.00†	26.90	25.90	41.50	52.50	28.50*
Average	42.67	36.09	24.43	32.76	44.23	39.57*

† OPS basing point price ceiling.

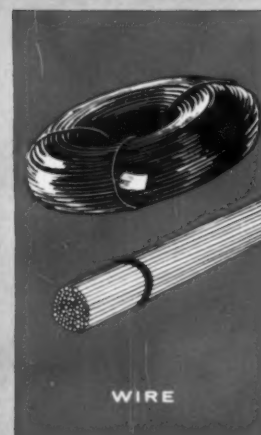
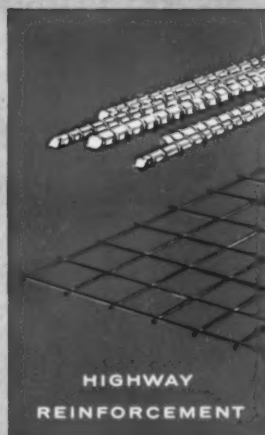
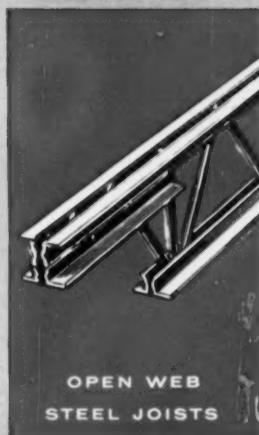


SCRAP OUTLOOK: Look for mediocre level of scrap business in opening months of 1958, Edwin C. Barringer warns. Decline in purchased scrap consumed and exported in 1957 (down about 6 million gross tons from 41 million in '56), came in the last half of the year, says Mr. Barringer of Scrap Institute. This downtrend in consumption will carry over into 1958, he predicts.



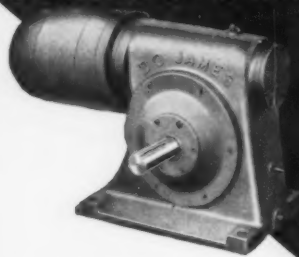
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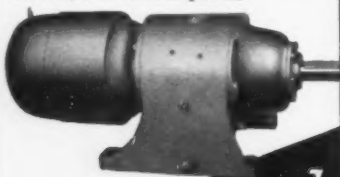
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1958 Meetings, Conventions

Here is a list of major trade association and technical society meetings and conventions this year.

Dates and places of activities are listed by months.

JANUARY

THE ALUMINUM ASSOCIATION—Annual meeting, Jan. 31, New York City. Association headquarters are at 420 Lexington Ave., New York.

COMPRESSED GAS ASSN., INC.—Annual meeting, Jan. 20-21, The Waldorf-Astoria, New York. Association headquarters are at 11 W. 42nd St., New York.

CUTTING TOOL MFRS. ASSN.—Annual meeting, Jan. 22, Detroit Yacht Club, Detroit. Association headquarters are at 416 Penobscot Bldg., Detroit.

INDUSTRIAL HEATING EQUIPMENT ASSN., INC.—Annual meeting, Jan. 27-28, Penn Sheraton Hotel, Pittsburgh. Association headquarters are at 1145 19th St., N.W., Washington.

INSTITUTE OF SCRAP IRON & STEEL, INC.—Annual convention, Jan. 19-22, Eden Roc, Fontainebleau and Deauville Hotels, Miami Beach, Fla. Institute headquarters are at 1729 H St., N.W., Washington.

MALLEABLE FOUNDERS' SOCIETY—Semi-annual meeting, Jan. 17, Hotel Cleveland, Cleveland. Society headquarters are at 1800 Union Commerce Bldg., Cleveland.

SOCIETY OF AUTOMOTIVE ENGINEERS, INC.—Annual meeting & Engineering display, Jan. 13-17, The Sheraton-Cadillac and Hotel Statler, Detroit. Society headquarters are at 485 Lexington Ave., New York.

SOCIETY OF PLASTICS ENGINEERS, INC.—14th Annual national technical conference, Jan. 28-31, Sheraton-Cadillac Hotel, Detroit. Society headquarters are at 34 E. Putnam Ave., Greenwich.

TRUCK-TRAILER MANUFACTURERS ASSN.—17th Annual convention, Jan. 20-22, Palm Beach Biltmore, Palm Beach, Fla. Association headquarters are at 710 Albee Bldg., Washington.

FEBRUARY

AMERICAN INSTITUTE OF MINING, METALLURGICAL, AND PETROLEUM ENGINEERS—Annual meeting, Feb. 17-20, Hotels Statler and McAlpin, New York City. Institute headquarters are at 29 W. 39th St., New York.

ASSN. OF IRON & STEEL ENGINEERS—Western meeting, Feb. 24-25-26, Hotel Statler, Los Angeles. Association headquarters are at 1010 Empire Bldg., Pittsburgh.

THE METALLURGICAL SOCIETY OF AIME—Annual meeting, Feb. 16-20, Hotels Statler and Sheraton-McAlpin, New York. Society headquarters are at 29 West 39th St., New York.

NON-FERROUS FOUNDERS' SOCIETY—West coast management & operating conference, Feb. 7-8, Ambassador Hotel, Los Angeles. Society headquarters are at 1604 Chicago Ave., Evanston.

MARCH

AMERICAN HOT DIP GALVANIZERS ASSN., INC.—Annual meeting, Mar. 27-28, Penn Sheraton Hotel, Pittsburgh. Association headquarters are at 1806 First National Bank Bldg., Pittsburgh.

AMERICAN MACHINE TOOL DISTRIBUTORS' ASSN.—Spring meeting, Mar. 9-10-11, The Roosevelt, New Orleans, La. Association headquarters are at 1900 Arch St., Phila.

CAN MANUFACTURERS INSTITUTE, INC.—Annual meeting, Mar. 3, Waldorf-Astoria Hotel, New York. Institute headquarters are at 1413 K St., N.W., Washington.

INTERNATIONAL ACETYLENE ASSN.—Annual convention, Spring, Mar. 19-21, The Bellevue-Stratford Hotel, Phila. Association headquarters are at 205 E. 42nd St., New York.

NATIONAL ASSN. OF CORROSION ENGINEERS—14th Annual conference & 1958 exhibition, Mar. 17-21, Civic Auditorium, San Francisco. Association headquarters are at 1061 M&M Bldg., Houston.

NATIONAL ASSN. OF WASTE MATERIAL DEALERS, INC.—45th Annual convention, Mar. 15-18, Waldorf-Astoria, New York City. Association headquarters are at 271 Madison Ave., New York.

APRIL

AMERICAN HOME LAUNDRY MFRS. ASSN.—42nd Annual meeting, Apr. 20-22, Boca Raton Club, Boca Raton, Fla. Association headquarters are at 29 N. Wacker Dr., Chicago.

AMERICAN SOCIETY OF LUBRICATION ENGINEERS—Annual meeting & exhibit, Apr. 22-23-24, Hotel Cleveland, Cleveland. Society headquarters are at 84 E. Randolph St., Chicago.

AMERICAN WELDING SOCIETY, INC.—39th Annual & National Spring meeting and Welding Exposition, Apr. 14-18, Hotel Statler, St. Louis. Society headquarters are at 33 West 39th St., New York.

CONCRETE REINFORCING STEEL INSTITUTE—Annual meeting, Apr. 6-12, The Boca Raton Hotel, Boca Raton, Fla. Institute headquarters are at 38 South Dearborn St., Chicago.

COPPER AND BRASS WAREHOUSE ASSN., INC.—7th Annual convention, Apr. 13-16, The Greenbrier, White Sulphur Springs, W. Va. Association headquarters are at 1900 Arch St., Phila.

THE ELECTROCHEMICAL SOCIETY, INC.—Semi-annual meeting, Apr. 27-28, 29-30 and May 1, Statler Hotel, New York. Society headquarters are at 1860 Broadway, New York.

GRINDING WHEEL INSTITUTE—Semi-annual spring meeting, Apr. 30, May 1-2, Grand Hotel, Point Clear, Ala. Institute headquarters are at 2130 Keith Bldg., Cleveland.

INDUSTRIAL FASTENERS INSTITUTE—Annual meeting, Apr. 8-10, Boca Raton Hotel, Boca Raton, Fla. Institute headquarters are at 1517 Terminal Tower, Cleveland.

Meetings

LEAD INDUSTRIES ASSN.—Annual meeting, Apr. 15-16, Chase Park Plaza, St. Louis, Mo. Association headquarters are at 60 E. 42nd St., New York.

THE MATERIAL HANDLING INSTITUTE, INC.—Spring membership meeting, Apr. 8, Hotel Cleveland, Cleveland. Institute headquarters are at One, Gateway Center, Pittsburgh.

THE METALLURGICAL SOCIETY OF AIME—41st open hearth steel and blast furnace, coke oven, and raw materials conference, Apr. 14-16, Statler Hotel, Cleveland. Society headquarters are at 29 West 39th St., New York.

METAL POWDER ASSN.—14th Annual meeting & 1958 Powder Metallurgy Show, Apr. 21-23, Philadelphia Sheraton Hotel, Phila. Association headquarters are at 130 W. 42nd St., New York.

METAL TREATING INSTITUTE—Spring meeting, Apr. 21-22-23, Phoenix, Arizona. Institute headquarters are at 271 North Ave., New Rochelle, N. Y.

NATIONAL MACHINE TOOL BUILDERS' ASSOCIATION—Spring meeting, Apr. 24-25, Edgewater Beach Hotel, Chicago. Association headquarters are at 2071 E. 102nd St., Cleveland.

NATIONAL SCREW MACHINE PRODUCTS ASSN.—25th Anniversary meeting, (annual industry meeting), Apr. 30-May 3, Drake Hotel, Chicago. Association headquarters are at 2860 East 130th St., Cleveland.

RAIL STEEL BAR ASSN.—Annual meeting, Apr. 28-30, The Inn, Williamsburg, Va. Association headquarters are at 33 S. Dearborn St., Chicago.

SCIENTIFIC APPARATUS MAKERS ASSN.—Annual meeting, Apr. 20-24, El Mirador Hotel, Palm Springs, Calif. Association headquarters are at 20 North Wacker Drive, Chicago.

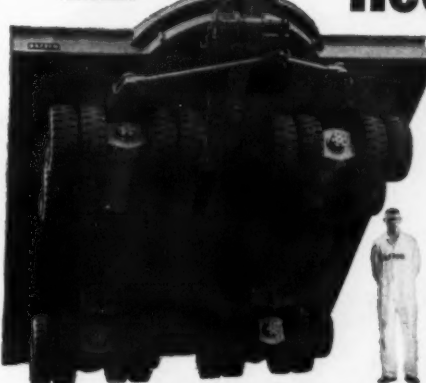
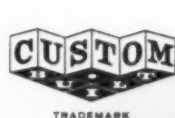
STEEL SHIPPING CONTAINER INSTITUTE—Annual meeting, week of Apr. 14, Kenilworth Hotel, Miami Beach, Fla. Institute headquarters are at 600 Fifth Ave., New York.

WIRE REINFORCEMENT INSTITUTE, INC.—Annual spring meeting, Apr. 7-8, Hotel Boca Raton, Boca Raton, Fla. Institute headquarters are at National Press Bldg., Washington.



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Meetings

MAY

ALUMINUM WARES ASSN.—Annual meeting, May 19-20, The Greenbrier, White Sulphur Springs, W. Va. Association headquarters are at 1806 First National Bank Bldg., Pittsburgh.

AMERICAN ELECTROPLATERS' SOCIETY, INC.—45th Annual convention, May 19-22, Sheraton-Gibson Hotel, Cincinnati. Society headquarters are at 445 Broad St., Newark.

AMERICAN FOUNDRYMEN'S SOCIETY—63rd Annual Castings Congress & Foundry Show, May 19-23, Public Auditorium, Cleveland. Society headquarters are at Golf and Wolf Rds., Des Plaines.

AMERICAN MINING CONGRESS—Coal convention, May 5-7, Netherland Hilton Hotel, Cincinnati. Headquarters are at 1200 18th St., Washington.

AMERICAN SOCIETY OF TOOL ENGINEERS—26th Annual meeting & Tool Show, May 1-8, Phila. Convention Center, Phila. Society headquarters are at 10700 Puritan, Detroit.

AMERICAN STEEL WAREHOUSE ASSN., INC.—Annual meeting, May 11-

12-13-14, Riviera Hotel, Las Vegas. Association headquarters are at 540 Terminal Tower, Cleveland.

COPPER & BRASS RESEARCH ASSN.—36th Annual meeting (members only) May 11-14, The Homestead, Hot Springs, Va. Association headquarters are at 420 Lexington Ave., New York.

INDUSTRIAL HEATING EQUIPMENT ASSN., INC.—Spring meeting, May 18-21, The Homestead, Hot Springs, Va. Association headquarters are at 1145 19th St. N.W., Washington.

MACHINERY DEALERS NATIONAL ASSN.—Annual convention, May 5-6-7, Eden Roc Hotel, Miami Beach, Fla. Association headquarters are at 1346 Connecticut Ave., Washington.

NATIONAL ASSN. OF PURCHASING AGENTS—Annual convention, May 11-14, Conrad Hilton Hotel, Chicago. Association headquarters are at 11 Park Place, New York.

NATIONAL ASSN. OF SHEET METAL DISTRIBUTORS—Spring meeting, May 8-9, Sheraton-Blackstone Hotel, Chicago. Association headquarters are at 1200 Arch St., Phila.

NATIONAL WELDING SUPPLY ASSN.—14th Annual convention, May 5-6-7, The Americana, Miami Beach, Fla. Association headquarters are at 1900 Arch St., Phila.

NON-FERROUS FOUNDERS' SOCIETY—Annual meeting, May 19-21, Carter Hotel, Cleveland. Society headquarters are at 1604 Chicago Ave., Evanston.

JUNE

ALLOY CASTING INSTITUTE—Annual meeting, June 21-24, The Homestead, Hot Springs, Va. Institute headquarters are at 286 Old Country Rd., Mineola.

AMERICAN BOILER MFRS. ASSN. AND AFFILIATED INDUSTRIES—Annual meeting, June 8-11, Skytop Lodge, Skytop, Pa. Association headquarters are at 4962 Mayfield Rd., Cleveland.

AMERICAN FOUNDRYMEN'S SOCIETY—3rd Annual Foundry Instructors Seminar, June 19-21, Caste Institute of Technology, Cleveland. Society headquarters are at Golf and Wolf Rds., Des Plaines.

AMERICAN GEAR MANUFACTURERS ASSN.—42nd Annual meeting, June 1-2-3-4, The Homestead, Hot Springs, Va. Association headquarters are at 1 Thomas Circle, Washington.

AMERICAN SOCIETY FOR TESTING MATERIALS—Annual meeting & 13th Exhibit of Scientific Apparatus and Laboratory Supplies, June 22-27, Hotel Statler, Boston, Mass. Society headquarters are at 1916 Race St., Phila.

INDUSTRIAL SAFETY EQUIPMENT ASSN., INC.—Annual meeting, June 24-27, Oyster Harbors, Osterville, Mass. Association headquarters are at 420 Lexington Ave., New York.

INSTITUTE OF APPLIANCE MANUFACTURERS—Annual convention & exhibit, June 2-3-4, Netherland Hilton Hotel, Cincinnati. Institute headquarters are at the Shoreham Hotel, Washington.

MALLEABLE FOUNDERS' SOCIETY—Annual meeting, June 9-10, The Homestead, Hot Springs, Va. Society headquarters are at 1800 Union Commerce Bldg., Cleveland.

SEPTEMBER

AMERICAN SOCIETY OF TOOL ENGINEERS—Semi-annual meeting & Western Tool show, Sept. 23-Oct. 3, Shrine Exposition Hall, Los Angeles. Society headquarters are at 10700 Puritan, Detroit.

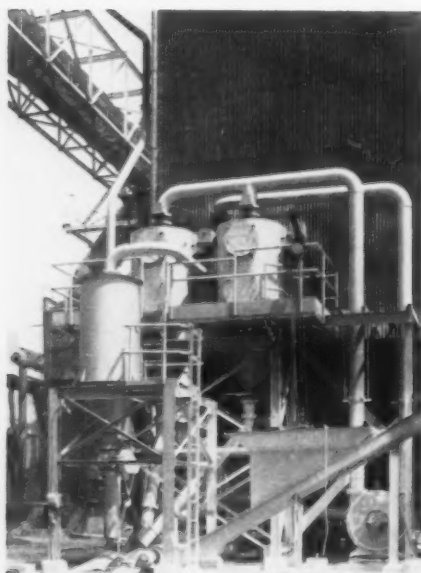
ASSN. OF IRON & STEEL ENGINEERS—Annual convention & exposition, Sept. 23-24-25-26, Cleveland Public Auditorium, Cleveland. Association headquarters are at 1010 Empire Bldg., Pittsburgh.

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THE ELECTROCHEMICAL SOCIETY, INC.—Semi-annual meeting, Sept. 28-29-30 and Oct. 1-2, Chateau Laurier, Ottawa, Canada. Society headquarters are at 1860 Broadway, New York.

NATIONAL PETROLEUM ASSN.—56th Annual meeting, Sept. 10-11-12, Hotel Traymore, Atlantic City. Association headquarters are at Munsey Bldg., Rm. 958, Washington.

PORCELAIN ENAMEL INSTITUTE—Annual meeting, Sept. 25-26-27, The Greenbrier, White Sulphur Springs, W. Va. Institute headquarters are at 1145 19th St., N.W., Washington.

OCTOBER

AMERICAN COKE & COAL CHEMICALS INSTITUTE—Annual meeting, Oct. 20-21, The Greenbrier, White Sulphur Springs, W. Va. Institute headquarters are at 711 14th St., N.W., Washington.

AMERICAN GEAR MANUFACTURERS ASSN.—1958 Semi-Annual meeting, Oct. 26-27-28-29, Edgewater Beach Hotel, Chicago. Association headquarters are at 1 Thomas Circle, Washington.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC.—Annual convention, Oct. 26-30, Greenbrier Hotel, White Sulphur Springs, W. Va. Institute headquarters are at 191 Park Ave., New York.

AMERICAN MACHINE TOOL DISTRIBUTORS' ASSN.—Annual meeting, Oct. 15-16-17, Sheraton Plaza, Boston, Mass. Association headquarters are at 1900 Arch St., Phila.

CONVEYOR EQUIPMENT MANUFACTURERS ASSN.—Annual meeting, Oct. 18-21, The Greenbrier Hotel, White Sulphur Springs, W. Va. Association headquarters are at 1 Thomas Circle, Washington.

FOUNDRY EQUIPMENT MANUFACTURERS ASSN., INC.—40th Annual meeting, Oct. 16-17-18, The Greenbrier Hotel, White Sulphur Springs, W. Va. Association headquarters are at 1 Thomas Circle, Washington.

GRAY IRON FOUNDERS' SOCIETY, INC.—National annual meeting, Oct. 8-9-10, Sheraton-Park Hotel, Washington. Society headquarters are at 930 National City-E. 6th Bldg., Cleveland.

THE MAGNESIUM ASSN.—Annual convention (open), Oct. 16-17, Fort Shelby Hotel, Detroit. Association headquarters are at 122 E. 42nd St., New York.

METAL TREATING INSTITUTE—Annual meeting, Oct. 17-18-19, Phila. Institute headquarters are at 271 North Ave., New Rochelle, N. Y.

NATIONAL ASSN. OF SHEET METAL DISTRIBUTORS—Fall meeting, Oct. 5-8, Marlborough-Blenheim Hotel, Atlantic City. Association headquarters are at 1900 Arch St., Phila.

RAIL STEEL BAR ASSN.—Semi-annual meeting, Oct. 20-22, Blackstone Hotel, Chicago. Association headquarters are at 38 S. Dearborn St., Chicago.

TRUCK BODY & EQUIPMENT ASSN., INC.—11th Annual convention & exhibit, Oct. 6-7-8, Ambassador Hotel, Atlantic City. Association headquarters are at 1616 K St., N.W., Washington.

THE WIRE ASSN.—Annual convention, Oct. 13-16, Chalfonte-Haddon Hall, Atlantic City. Association headquarters are at 453 Main St., Stamford.

NOVEMBER

AMERICAN SOCIETY OF MECHANICAL ENGINEERS—Annual meeting, Nov. 30-Dec. 5, Statler & Sheraton-McAlpin Hotels, New York. Society headquarters are at 29 West 39th St., New York.

AUTOMOTIVE TOOL & DIE MFRS. ASSN.—Annual meeting, Nov. 26, Fort Shelby Hotel, Detroit. Association headquarters are at 193 Pallister Ave., Detroit.

GRINDING WHEEL INSTITUTE—Semi-annual fall meeting, Nov. 5-6-7, Statler Hotel, Buffalo. Institute headquarters are at 2130 Keith Bldg., Cleveland.

NATIONAL ELECTRICAL MANUFACTURERS ASSN.—Annual meeting, Nov. 10-13, Hotel Traymore, Atlantic City. Association headquarters are at 155 E. 44th St., New York.

NATIONAL MACHINE TOOL BUILDERS' ASSN.—Annual meeting, Nov. 5-6-7, The Homestead, Hot Springs, Va. Association headquarters are at 2071 E. 102nd St., Cleveland.

NATIONAL METAL TRADES ASSN.—Biennial convention, Nov. 5-7, Hotel Commodore, New York City. Association headquarters are at 337 W. Madison St., Chicago.

NATIONAL TOOL & DIE MANUFACTURERS—Annual convention, Nov. 5-9, Sheraton, Phila. Association headquarters are at 907 Public Square Bldg., Cleveland.

DECEMBER

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS—Annual meeting, Dec. 7-10, Netherland Hilton Hotel, Cincinnati. Institute headquarters are at 25 W. 45th St., New York.

THE MATERIAL HANDLING INSTITUTE, INC.—Annual membership meeting, Dec. 10, Hotel Roosevelt, New York. Institute headquarters are at One Gateway Center, Pittsburgh.

THE METALLURGICAL SOCIETY OF AIME—16th electric furnace steel conference, Dec. 3-5, Hotel Statler, Detroit. Society headquarters are at 29 West 39th St., New York.

SPRING MANUFACTURERS ASSN.—Annual meeting, Dec. 2-3, Barbizon Plaza Hotel, New York. Association headquarters Box 1440, Bristol, Conn.

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Trade Association Directory

This handy guide lists the main metalworking trade associations and technical groups.

Headquarters addresses and society officers are given.

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1346 Connecticut Ave., N.W., Washington 6, D. C.
Managing Dir.: G. S. Jones, Jr.

Aircraft Industries Assn. of America
610 Shoreham Bldg., Washington 5, D. C.
Pres.: Admiral DeWitt C. Ramsey, USN (Ret.)

Air Moving & Conditioning Assn., Inc.
2159 Guardian Bldg., Detroit 26, Mich.
Exec. Vice Pres.: Marshall F. Allen

Alloy Casting Institute
286 Old Country Rd., Mineola, N. Y.
Exec. Vice Pres.: E. A. Schoefer

The Aluminum Assn.
420 Lexington Ave., New York 17, N. Y.
Sec.: Donald M. White

Aluminum Extruders Council
1015 Chestnut St., Philadelphia, Pa.
Exec. Secy.: Walter H. Gebhart

Aluminum Smelters Research Institute
20 N. Wacker Drive, Chicago 6, Ill.
Sec.: Carl H. Burton

Aluminum Wares Assn.
1806 First National Bank Bldg., Pittsburgh 22, Pa.
Secy.: Stuart J. Swenson

Aluminum Window Manufacturers Assn.
75 West St., New York 6, N. Y.
Secy. & Counsel: Herbert S. Blake, Jr.

American Boiler Mfrs. Assn. and Affiliated Industries
4062 Mayfield Rd., Cleveland 21, Ohio
Secy.: A. C. Baker

American Bureau of Metal Statistics
50 Broadway, New York, N. Y.
Director: R. R. Eckert

American Coke & Coal Chemicals Institute
711 Fourteenth St., N.W., Washington 5, D. C.
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American Die Casting Institute
366 Madison Ave., New York 17, N. Y.
Secy.: David Laine

American Electroplaters' Society
445 Broad St., Newark 2, N. J.
Exec. Secy.: John P. Nichols

American Foundrymen's Society
Golf & Wolf Roads, Des Plaines, Ill.
Gen'l Mgr.: W. W. Maloney

American Gas Assn.
420 Lexington Ave., New York 17, N. Y.
Managing Dir.: C. S. Slackpole

American Gear Manufacturers Assn.
One Thomas Circle, Washington 5, D. C.
Exec. Secy.: John C. Sears

American Hardware Manufacturers Assn.
342 Madison Ave., New York 17, N. Y.
Secy.: A. L. Faubel

American Home Laundry Manufacturers' Assn.
20 N. Wacker Dr., Chicago 6, Ill.
Exec. Dir.: Guenther Baumgart

American Hot Dip Galvanizers Assn., Inc.
1806 First National Bank Bldg., Pittsburgh 22, Pa.
Secy.: Stuart J. Swenson

American Institute of Chemical Engineers
25 W. 45th St., New York, N. Y.
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American Institute of Mining, Metallurgical, & Petroleum Engineers
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Secy.: Ernest Kirkendall

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101 Park Ave., New York 17, N. Y.
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350 Fifth Ave., New York 1, N. Y.
Exec. Dir.: Max D. Howell

American Iron Ore Assn.
1400 Hanna Bldg., Cleveland 15, Ohio
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American Machine Tool Distributors Assn.
1900 Arch St., Philadelphia 3, Pa.
Gen'l Mgr.: James C. Kelley

American Manganese Producers Assn.
National Press Bldg., Washington 4, D. C.
Pres.: J. C. Adkerson

American Mining Congress
1200 18th St., N.W., Washington 6, D. C.
Exec. Vice Pres.: Julian D. Conover

American Ordnance Assn.
704 17th St., N.W., Mills Bldg., Washington 6, D. C.
Exec. Vice Pres.: L. A. Codd

American Railway Car Institute
19 East 47th St., New York 17, N. Y.
Pres.: Lester N. Selig

American Society for Metals
7301 Euclid Ave., Cleveland 3, Ohio
Secy.: W. H. Eisenman

American Society of Testing Materials
1916 Race St., Philadelphia 3, Pa.
Exec. Secy.: Robert J. Painter

American Society of Lubrication Engineers
84 E. Randolph St., Chicago 1, Ill.
Admin. Secy.: Calvert L. Wiley

American Society of Mechanical Engineers
29 W. 39th St., New York 18, N. Y.
Secy.: C. E. Davies

American Society of Tool Engineers
10700 Puritan Ave., Detroit 38, Mich.
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Secy.: Joan Hill

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General Foundry & Mfg. Co., Flint, Mich.
Georgia Iron Works, Augusta, Ga.
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Hardinge Manufacturing Co., York, Pa.
Johnstone Foundries, Inc., Grove City, Pa.
Kanawha Manufacturing Co.,
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Lincoln Foundry Corp., Los Angeles, Calif.
Nordberg Manufacturing Co., Milwaukee,
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The metallurgical composition and structure of each type listed below is accurately pre-determined in the

molten metal. Regulation of the quantity and disposition of graphite and the adjustment of the microconstituents permits achievement of the required properties.

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CLASSIFICATIONS AND SPECIFICATIONS OF MEEHANITE METAL

Type	Tensile Strength	GENERAL ENGINEERING TYPES			Fatigue Strength	Brinell Hardness Section
	Min. p. s. i.	Mod. of Elasticity p. s. i.	Compressive Strength p. s. i.	Shear Strength p. s. i.	p. s. i.	
GM	55,000	22,000,000	200,000	55,000	25,000	217
GA	50,000	20,000,000	175,000	48,000	22,000	207
GB	45,000	18,000,000	160,000	44,000	19,000	196
GC	40,000	17,000,000	150,000	40,000	17,500	192
GD	35,000	14,500,000	130,000	35,000	15,000	183
GE	30,000	12,000,000	120,000	30,000	13,700	174
GS	80,000	24,000,000	160,000	65,000	35,000	207
GSF	60,000	23,000,000	120,000	55,000	20,000	190-250

HEAT RESISTING TYPES						
Processed, according to type, to resist temperatures up to a maximum of 1650 deg. F. Tensile strengths at normal temperatures between 27,000 and 50,000 lb. p. s. i. Strength properties under elevated temperatures available on request.						
HA	50,000	20,000,000	175,000	48,000	22,000	223
HB	40,000	21,000,000	162,000	42,500	19,000	300
HC	38,000	18,000,000	160,000	40,000	19,000	300
HD	38,000	18,000,000	160,000	40,000	18,000	300
HE	33,000	15,000,000	145,000	34,000	16,000	223
HR	30,000	10,000,000	.....	31,000	.....	223
SC	27,000	17,000,000	130,000	28,000	20,000	300

WEAR RESISTING TYPES			
For resistance to hard surface wear. (Brinells to 578), a variety of Wear Resisting Meehanite castings provides types for specific wear problems. Poured under strict metallurgical control, physical properties are predetermined according to service requirements.			
Type	Condition	Tensile Strength — p. s. i.	Brinell Hardness Number to specification
WAH	Heat Treated	Up to 70,000	200-600
WA	Sand Cast	Up to 50,000	193-321
Modified WH	Sand Cast	Up to 50,000	Up to 532
WB	Sand Cast	Up to 50,000	300-532
WBC	Chill Cast	Up to 45,000	Up to 500 on Chill Face
Standard WH	Sand Cast	Up to 30,000	Up to 575
WEC	Chill Cast	Up to 30,000	Over 444

CORROSION RESISTING TYPES						
Used extensively in the chemical, metallurgical and oil refining industries to resist certain acids and chemicals.						
Type	Tensile Strength p. s. i.	Modulus of Elasticity p. s. i.	Compressive Strength p. s. i.	Service	Brinell Hardness	
CB ₃	45,000	19,000,000	160,000	Concentrated Acids	197	
CB	45,000	19,000,000	160,000	Acids & Chemicals	187	
CC	40,000	19,000,000	160,000	Atmospheric	192	
KC	32,000	14,000,000	130,000	Alkalies	197	

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THE IRON AGE, January 2, 1958

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Heat Exchange Institute
122 E. 42nd St., New York 17, N. Y.
Secy.: Frank P. Anderson

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Secy.: R. E. O'Rourke

Hollow Metal Door and Buck Assn.
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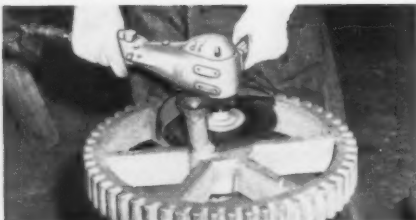
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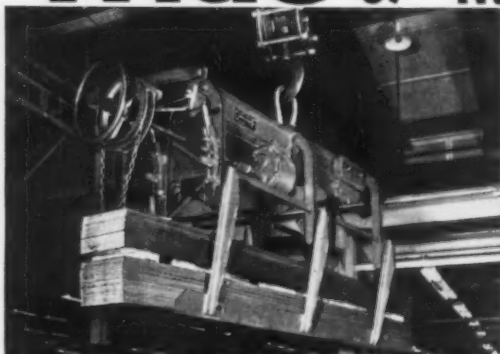
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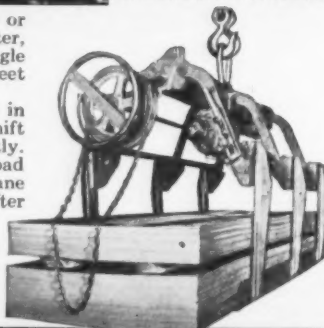
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2

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3

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The Smokatron Electrostatic Precipitator is, by nature, easy to operate and maintain. It can be put into operation immediately with the push of a button and will remain efficient and trouble-free through the years.

4

SMOKE ORDINANCES ARE GETTING STIFFER

Local ordinances regulating air pollution are getting "teeth." Get all the facts before you purchase any air pollution control equipment. The machine you buy today may not be allowed under the more stringent controls of tomorrow. Smokatron is guaranteed effective.

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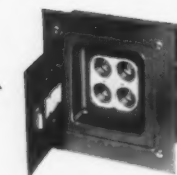
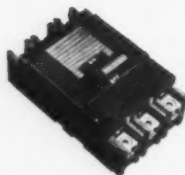
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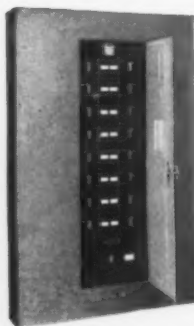
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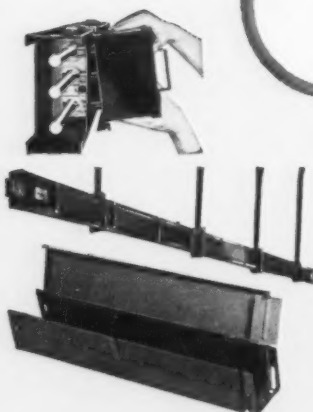
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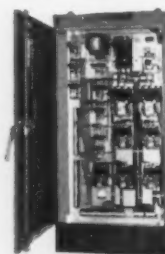
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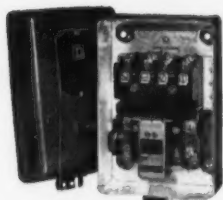
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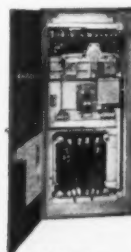
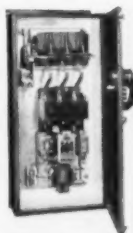
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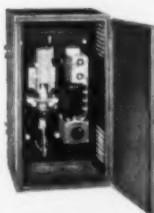
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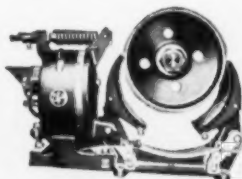
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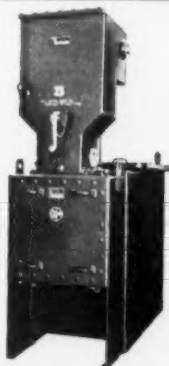
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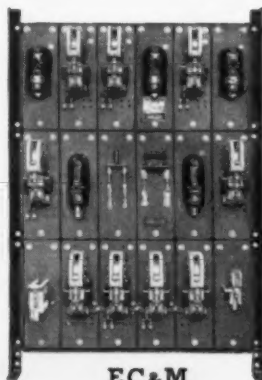
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The Iron Age Summary

Steel Caught Between Two Fires

Higher wages and falling market put squeeze on industry. But prices won't rise now.

Steel market enters New Year on downbeat. Operations scheduled at half capacity.

■ The nation's steel mills are caught between two fires this week: Higher wages and a falling market.

Steel labor costs are up about \$46 million per year, effective this week. The pay boost of five cents an hour represents a cost-of-living adjustment under contracts with the United Steel Workers. An estimated 470,000 production workers will receive the pay increase.

No Price Boost Now—Despite the wage rise, steel prices probably will not move up. But it will increase the pressure for higher prices next July when steel labor gets an automatic seven cents an hour pay boost under its three-year contract with the steel companies.

If the cost of living continues to

rise the steel workers will get another cost-of-living pay boost next July. These increases to date have cost the steel companies 12¢ an hour over and above the basic wage boosts and improved fringe benefits covered in the labor contracts.

But \$5-6 Rise Coming—Close observers of the steel industry look for a price boost of \$5-6 per ton at mid-year. It could be more if a cost-of-living pay boost as substantial as the latest one is necessary next July.

Meanwhile the steel market entered the New Year on the downbeat. Mills were operating at slightly more than 50 pct of capacity. New orders were being offset by cancellations and requests for hold-ups on delivery. Customers were asking—and getting—prompt delivery on all products with the exception of linepipe. And even linepipe order books were beginning to show occasional openings.

Auto News Is Bad—The news from Detroit is becoming worse in-

stead of better. The auto companies have cut back production and laid off thousands of workers for periods up to two weeks. For steel, this means that automotive steel inventories will be that much fatter as the New Year begins. The feeling is that the automakers will reschedule more steel deliveries for the next two months. And the chain reaction eventually will affect the steel ordering pattern of automotive suppliers.

It's estimated that some 15 to 25 pct of automotive steel originally scheduled for January delivery has been rescheduled.

Production Off—A steel sales manager in Detroit puts it this way: "I'm glad I'm not a commission man. Some of them have had the New Year ham snatched right out of the oven in the last week."

Steel output this week—as it was last week—will be approximately 1.4 million ingot tons. Except for periods of strike, it's the lowest production period in steel in more than eight years.

Steel Output, Operating Rates

Production	This Week	Last Week	Month Ago	Year Ago
(Net tons, 000 omitted)	1,382	1,382	1,997	2,388
Ingot Index				
(1947-1949=100)	86.0	86.0	124.3	148.7
Operating Rates				
Chicago	70.0	65.0	78.5	102.0
Pittsburgh	56.0	48.0	81.0	100.0
Philadelphia	45.0	45.0	87.0	102.0
Valley	35.0	34.0	64.0	99.5
West	70.0	70.0*	80.0	100.0
Buffalo	56.0	61.0	99.0	105.0
Cleveland	55.0	55.0	85.0	96.0
Detroit	54.0	40.0	92.0	99.0
S. Ohio River	57.5	57.5*	83.0	90.0
South	71.0	71.0	67.0	90.0
Upper Ohio R.	58.0	58.0	74.5	99.5
St. Louis	51.5	51.5	91.0	64.0
Northeast	31.0	31.0	40.0	99.0
Aggregate	54.0	54.0	78.0	97.0

*Revised

Prices At a Glance

(cents per lb unless otherwise noted)

	This Week	Week Ago	Month Ago	Year Ago
Composite price				
Finished Steel, base	5.967	5.967	5.967	5.622
Pig Iron (Gross ton)	\$66.42	\$66.42	\$66.42	\$63.04
Scrap, No. 1 hvy				
(Gross ton)	\$32.83	\$32.83	\$32.33	\$63.50
No. 2 bundles	\$24.50	\$24.50	\$24.33	\$50.67
Nonferrous				
Aluminum ingot	28.10	28.10	28.10	27.10
Copper, electrolytic	27.00	27.00	27.00	36.00
Lead, St. Louis	12.80	12.80	13.30	15.80
Magnesium ingot	36.00	36.00	36.00	36.00
Nickel, electrolytic	74.00	74.00	74.00	64.50
Tin Straits, N. Y.	92.75	92.75*	87.25	102.25
Zinc, E. St. Louis	10.00	10.00	10.00	13.50

Abrasives Due for Sales Upturn

Right now buyers of abrasives can count on good supplies, fast deliveries, and stable prices.

However, market may tighten considerably during second half of the year.

■ Always sensitive to the ups and downs of metalworking operations, the abrasive industry hopes to hold present levels during the first half of 1958. Thereafter, they look for a sales upturn.

For purchasers this means ample supplies of most abrasives at stable prices. There is no delivery problem for most products, although diamonds and some of the newer abrasives are limited in supply. There seems little possibility of price changes during the first half, particularly since coated abrasive belt makers have just finished increasing

schedules. At least one large wheel maker expects to raise prices when sales pick up, but doesn't see this until June at the earliest.

Supplies Are Good—Supplies of finished products and raw materials will generally be ample. Diamonds continue to be in limited supply, and this condition will probably remain for two or three years. Some newer abrasives tend to be scarce shortly after introduction, until supply and demand can be brought into balance. But such shortages are normally only temporary. Stocks of finished products are high, and deliveries are fast.

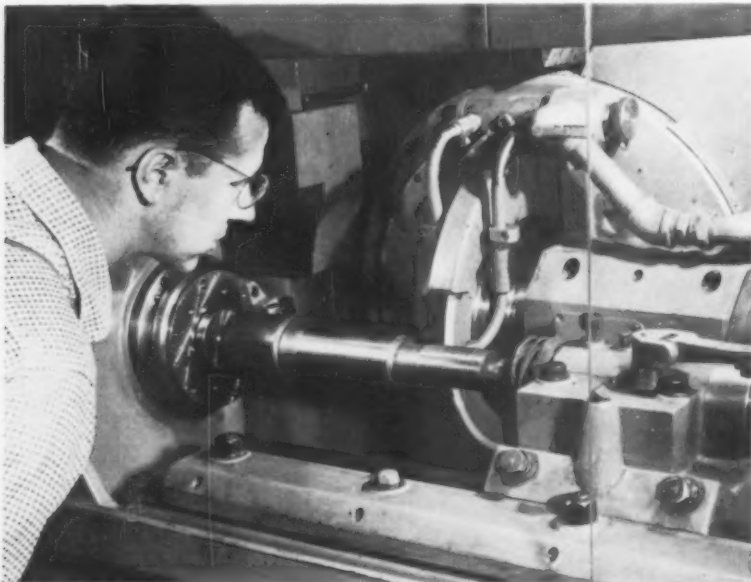
Sales of bonded wheels next year will probably be slightly under recent levels in both dollars and volume of sales. Coated abrasives are expected to slip slightly in sales volume, but dollar volume should hold up, thanks to recent price in-

creases. Producers stress that the declines, as far as they can tell, will be small at worst. Anticipation of a pickup in second half is general, but no one now can say how sharp it will be. A real boom could, of course, raise '58 to banner sales levels.

Abrasives Are the Key—A rise in abrasive sales can be a tip-off to a general increase in over-all metalworking operations. Historically, abrasive sales rise slightly in advance of other indicators, slope off at about the same time. Reason is their highly diversified market, with customers ranging from the corner garage to the nation's largest plants.

Expansion Tapers Off—The industry is finishing up a round of plant expansions, and little new building is planned for the immediate future. Some construction is slated to start in '58, but this is mainly to round off programs already announced. One thing to watch, however, is the possibility of additional capacity for grinding machines. One or two wheel and belt makers have such plans, and others may follow suit. But for abrasives themselves, the industry feels it has sufficient capacity for the future.

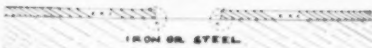
Tighten in Second Half?—The industry continues to carry on a long-range research and development program. This program is basically two-pronged. It seeks better abrasives and better ways of using existing materials. Executives are leery of talking about new developments until they are ready for the market, but one leading manufacturer of coated abrasive belts says it will definitely announce significant advances in three products in 1958. New developments will permit substantially higher grinding speeds and better finishes.



MARKET BAROMETER: Sales of abrasives for grinding applications such as threading of hold-down bolts at Westinghouse Atomic Equipment Dept. are often good key to the level of industrial activity.

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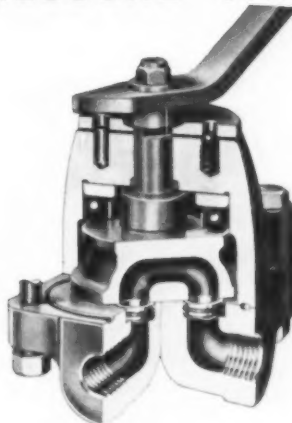


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Mills Work to Land "Rush" Orders

Even buyer requests of small tonnages for fast delivery are getting red carpet attention.

Mills are willing to absorb freight in attempt to land more orders.

■ Steel orders, even for minimum tonnages, are getting maximum attention from the mills.

With competition for orders razor-keen, the salesmen are overlooking no bets. The emphasis continues to be on fast delivery. Buyers, both small and large, are content to order on a last-minute basis. They let the producers worry about getting the steel to them in time.

Some salesmen have picked up orders by simply being in purchasing agents' offices when a hurry-up request went out for more steel to fill an inventory hole.

Stones Without Blood—However, even when rapid delivery is needed to get an order salesman can't always make the customer happy. On products like bar, for example, they find it difficult to cut delivery promises below the minimum processing time. Because of the wide variety of bar sizes and types mills can't carry enough semi-finished or finished stock on hand to fill all order requests in a short time.

Another competitive weapon—freight equalization—is beginning to get a good workout. Out-of-the-area producers are using it to give Midwest sheet mills a tough run for business. Often they persuade a local buyer to give them a trial order and test their delivery service and quality.

Sheet and Strip—If orders pickup

after the holidays, January sales will be on a level with December's, according to some mill men. Others are less optimistic. One **Eastern** producer has open space in both hot and cold-rolled sheet schedules for this month. Most of the mill's customers are either ordering for February or deferring January tonnages to that month. Both large and small users in the **Pittsburgh** area are buying on a last minute basis, counting on the mills to make delivery quickly. Shifting of January sheet orders into February is plaguing mills in the **Detroit** area. Because the auto firms will be able to use steel originally earmarked for December consumption this month more order reshuffling is expected in the next 4-6 weeks. In **Cleveland** setbacks on cold-rolled sheet from automakers, appliance manufacturers, and other users are bothering producers. Mills there are doing better with specialty coated and enameled sheets as hardware, furnace and other manufacturers dress up products.

PURCHASING AGENT'S CHECKLIST

MARKET OUTLOOK 1958

Are we heading into a "prosperous" recession? **P. 149**

Executives Forecast for '58—a survey of 17 industries covering the outlook for sales, profits, wages, prices, raw materials, inventories, and order backlogs. **P. 179**

Complete rundown on the markets for stainless steel, aluminum, copper and their alloys. **P. 267**

Plate—January plate orders are disappointing some mills. An **Eastern** mill expects production for this month to be $\frac{1}{3}$ below December totals. Open space on the firm's January books still existed the last week in December. A leading **Pittsburgh** mill reports that plate is available for prompt delivery. Warehouses there are overstocked and say demand from their customers is off. Plate users in the **Farwest** are having less trouble getting product.

Bar—Orders for both hot-rolled and cold finished bar are being hurt by the slowdown in auto production. Buyers have either cancelled orders or requested later delivery. January bar tonnages are expected to show little if any improvement over December's. The volume of orders for **Cleveland** area mills is good but the actual tonnages involved are small. Customers there who normally order large tonnages are content to fill inventory holes with quick shipments. Such ordering for rapid delivery is handicapping producers.

Pipe and Tubing—Depressed demand has caught up with seamless pipe producers. A large mill in the **Pittsburgh** area has reduced operations from 20 to 15 turns a week. Another is working at about one-third its capacity. A third is also making production cutbacks. Line-pipe demand also has eased off.

Stainless—Producers can console themselves with the knowledge that 1958 cars contain more stainless than the 1957 models. Otherwise, the news isn't encouraging. With the current falloff in auto production, stainless ordering is slowing down with little chance of a first quarter pickup.

Tinplate—Mills are starting to receive releases from customers on January shipments of tinplate. While the pickup has not been great, the producers believe January will be their best month since September. However, the mills still have large inventories to work down and production will probably be limited to a level less than shipments.

COMPARISON OF PRICES

(Effective Dec. 27, 1957)

Steel prices on this page are the average of various f.o.b. quotations of major producing areas: Pittsburgh, Chicago, Gary, Cleveland, Youngstown.

Price advances over previous week are printed in Heavy Type; declines appear in *Italics*.

	Dec. 27 1957	Dec. 23 1957	Nov. 26 1957	Dec. 25 1956
Flat-Rolled Steel: (per pound)				
Hot-rolled sheets	4.925¢	4.925¢	4.925¢	4.875¢
Cold-rolled sheets (10 ga.)	6.05	6.05	6.05	5.76
Galvanized sheets	6.60	6.60	6.60	6.30
Hot-rolled strip	4.925	4.925	4.925	4.875
Cold-rolled strip	7.17	7.17	7.17	6.870
Plate	5.12	5.12	5.12	4.87
Plates, wrought iron	13.15	13.15	13.15	10.40
Stain's C-R strip (No. 302)	52.00	52.00	52.00	47.50

Tin and Terneplate: (per base box)				
Tinplate (1.50 lb.) coils	\$10.30	\$10.30	\$10.30	\$9.95
Tin plates, electro (0.50 lb.)	9.00	9.00	9.00	8.65
Special coated mfg. ternes	9.55	9.55	9.55	9.20

Bars and Shapes: (per pound)				
Merchant bar	5.425¢	5.425¢	5.425¢	5.075¢
Cold finished bars	7.30	7.30	7.30	6.85
Alloy bars	6.475	6.475	6.475	6.125
Structural shapes	5.275	5.275	5.275	5.00
Stainless bars (No. 302)	45.00	45.00	45.00	40% 43%
Wrought iron bars	14.45	14.45	14.45	11.50

Wire: (per pound)				
Bright wire	7.65¢	7.65¢	7.65¢	7.20¢

Rails: (per 100 lb.)				
Heavy rails	\$5.525	\$5.525	\$5.525	\$5.075
Light rails	5.50	5.50	5.50	5.00

Semi-finished Steel: (per net ton)				
Re-rolling billets	\$77.50	\$77.50	\$77.50	\$74.00
Slabs, re-rolling	77.50	77.50	77.50	74.00
Forging billets	96.00	96.00	96.00	91.50
Alloy blooms, billets, slabs	114.00	114.00	114.00	107.00

Wire Rods and Skelp: (per pound)				
Wire rods	6.15¢	6.15¢	6.15¢	5.80¢
Skelp	4.875	4.875	4.875	4.225

Finished Steel Composite: (per pound)				
Base price	5.967¢	5.967¢	5.967¢	5.622¢

Finished Steel Composite
Weighted index based on steel bars, shapes, plates, wire, rails, black pipe, hot and cold rolled sheets and strips.

Pig Iron Composite

Based on averages for basic iron at Valley furnaces and foundry iron at Chicago, Philadelphia, Buffalo, Valley and Birmingham.

Steel Scrap Composite

Averages of No. 1 heavy melting steel scrap delivered to consumers at Pittsburgh, Philadelphia and Chicago.

	Dec. 27 1957	Dec. 23 1957	Nov. 26 1957	Dec. 25 1956
Pig Iron: (per gross ton)				
Foundry, del'd Phila.	\$70.51	\$70.51	\$70.51	\$67.76
Foundry, Valley	66.50	66.50	66.50	63.00
Foundry, Southern Cin'ti	71.65	71.65	71.65	67.17
Foundry, Birmingham	62.50	62.50	62.50	59.00
Foundry, Chicago	66.50	66.50	66.50	63.00
Basic, del'd Philadelphia	70.01	70.01	70.01	66.84
Basic, Valley furnace	66.00	66.00	66.00	62.50
Malleable, Chicago	66.50	66.50	66.50	63.00
Malleable, Valley	66.50	66.50	66.50	63.00
Ferromanganese, 74-76 pct Mn, cents per lb.	12.25	12.25	12.25	11.75-12.75

Pig Iron Composite: (per gross ton)				
Pig iron	\$66.42	\$66.42	\$66.42	\$63.04

Scrap: (per gross ton)				
No. 1 steel, Pittsburgh	\$32.50	\$32.50	\$33.50	\$65.50
No. 1 steel, Phila. area	35.50	35.50	33.00	62.50
No. 1 steel, Chicago	30.50	30.50	30.50	62.50
No. 1 bundles, Detroit	19.50	21.50	22.50	60.50
Low phos., Youngstown	33.50	33.50	30.50	70.50
No. 1 mach'y cast, Pittsburgh	50.50	50.50	50.50	61.50
No. 1 mach'y cast, Philadel'a	50.50	50.50	50.50	60.50
No. 1 mach'y cast, Chicago	43.50	42.50	40.50	57.50

Steel Scrap Composite: (per gross ton)				
No. 1 hvy. melting scrap	\$32.83	\$32.83	\$32.33	\$63.50
No. 2 bundles	24.50	24.50	24.33	50.67

Coke, Connellsville: (per net ton at oven)				
Furnace coke, prompt	\$15.38	\$15.38	\$15.38	\$15.50
Foundry coke, prompt	\$17.50-\$19	\$17.50-\$19	\$17.50-\$19	\$18-19

Nonferrous Metals: (cents per pound to large buyers)				
Copper, electrolytic, Conn.	27.00	27.00	27.00	36.00
Copper, Lake, Conn.	27.00	27.00	27.00	36.00
Cin. Straits, N. Y.	92.75†	92.75*	87.25	102.25
Zinc, East St. Louis	10.00	10.00	10.00	13.50
Lead, St. Louis	12.80	12.80	13.30	15.80
Aluminum, virgin ingot	28.10	28.10	28.10	27.10
Nickel, electrolytic	74.00	74.00	74.00	64.50
Magnesium, ingot	36.00	36.00	36.00	36.00
Antimony, Laredo, Tex.	33.00	33.00	33.00	33.00

† Tentative. ‡ Average. * Revised.

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Deformed Bars (½" Dia. incl. all extras)	\$5.98	\$6.15	\$6.12	\$5.76
Merchant Bars (½" Round incl. all extras)	7.05	7.29	6.85	6.28
Bands (1½"x½"x20" incl. all extras)	7.76	7.98	7.65	7.38
Angles (2"x2"x½" incl. all extras)	5.98	6.23	6.46	6.10
Beams & Channels (base)	6.43	6.66	6.92	5.56
Furring Channels (C.R. ½", per 1000')	26.67	27.36	...	...
Barbed Wire (per 82 lb. net reel)	6.95	7.40	7.75	7.80
Nails (bright, common, 20d and heavier)	8.12	8.32	8.97	8.79
Larsen Sheet Piling (section II, new, incl. size extra)	7.80	8.10	8.10	7.80
Wire, Manufacturer's bright, low C. (11½ ga.)	7.15	7.29	8.29	8.29
Wire, Galv., Fence Qual., Low C. (11½ Gauge)	7.68	7.82	9.09	9.09
Wire, Merchant quality, bl. ann., (10 ga.)	7.27	7.42	8.45	8.45
Rope Wire (.045", 247,000 PSI, incl. extras)	13.60	13.75	13.00	13.00
Wire, fine and weaving, low C. (20 ga.)	10.66	10.80	10.17	12.17
Tie Wire, autom. baler (14½ ASWG, 97 lbs. net)	9.53	9.73	9.64	9.54
Merchant Pipe (½" galv. T & C, per 100')	8.48	8.83	...	...
Casing (5½", 15.5 J55, T & C, per 100')	189.00	194.00	...	...
Tubing (2½", 6.4 J55, EUE, per 100')	98.00	99.00
Forged R Turn. Bars, C-1035 (from 10" di.)	13.50	13.78	13.50	13.24

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Market at Bottom; Upturn Unlikely

Most prices are at the minimum point at which scrap could move in significant tonnage.

Mill inventories are at relatively high levels although little scrap is moving.

■ The market apparently is resting on the bottom. Prices are at or near the bare minimum at which scrap can move and, for the most part, significant reductions in the future would be unrealistic.

This does not mean that the market is strengthening. Little scrap is moving anywhere and rebounding is not likely for some time. Mills have ample inventories, although little scrap is moving into yards at present low prices.

The uncertainty of the market is reflected in the recent purchase of No. 1 heavy melting in Philadelphia at several dollars over the previously quoted price. This order did little to strengthen the market. In fact, price increases made in sympathy in an adjacent market were withdrawn as subsequent activity did not sustain the higher level.

The prices of openhearth grades in Philadelphia are still unresolved, with a \$3 spread continuing.

Chicago showed some evidence of strengthening. In Pittsburgh, the bottom has been reached, but with little talk of an upturn. Automotive lists indicated a mild upturn, but not sufficient to affect market prices of dealer scrap.

Substantially less automotive list scrap is being offered and one list has been withdrawn.

The IRON AGE Composite

prices, for both No. 1 heavy melting and No. 2 bundles, are unchanged at \$32.83 and \$24.50, respectively.

Pittsburgh — The market may have touched bottom here. Dealers are reluctant to sell at present prices. Although yard inventories of No. 1 heavy melting are ample, little additional scrap is coming in from collectors. One dealer reported that truckers of obsolescent scrap have dropped off by more than 50 pct compared with last year.

Chicago — Growing pressure on the dwindling supply of foundry grades forced minor price increases. Mill buying of steelmaking grades continues to be notable by its absence. Cast continues very strong and electric furnace shows increasing strength, with new buying in both Chicago and Milwaukee.

Philadelphia — There was little activity in this market during the holiday week and prices remained unchanged. A wide difference of opinion over prices for openhearth grades is still in evidence. Consequently, a \$3 spread which went into effect last week continues for these grades.

New York — Recent advances in an adjoining area failed to sustain sympathetic rises in this area. Prices for steelmaking grades have dropped back \$1 to earlier levels. Turnings and cast items are virtually dead, and prices are largely nominal. In addition, bundles are starting to pile up in dealers' yards. Little early improvement is expected.

Detroit — A quiet holiday market leaves prices unchanged here. Reduced automobile output and steel production through the holiday period have further deadened a quiet market. Industrial scrap lists closing at year's end offered up to 25 pct less material than last month.

Cleveland — Earlier auto lists boosted the price of factory bundles \$1 but later lists could very well bring it down. Reason for the boost is two-fold: One major lot was withdrawn and scrap generated will be offered to December bidders at December prices, but bidders have the privilege of declining. Other tonnage is going for speculation.

Birmingham — Small purchases of electric furnace grades by a few mills provided the major activity in the scrap market here. Dealers who are uninterested in orders at present prices anticipate a rise with the new year. Consumers, however, indicate their needs will be small.

St. Louis — Very little scrap is being bought here, as mill inventories are reported to be in good shape and the operating rate is off for the holidays. A leading consumer reduced No. 1 heavy melting and No. 1 dealer bundles by \$2.

Cincinnati — The outlook indicates continued lethargy, but dealers are holding out for their prices. Scrap generating in the area is at a depressed level, thus darkening the picture more.

Buffalo — The market remains inactive here. No new business is expected until later this month. The area's biggest mill shut down two more openhearth.

Boston — There is little change in the market here. There is very little business, either domestic or for export. Reported strength elsewhere along the coast is not reflected in the New England area.

West Coast — Domestic market is at a standstill all along the Coast. Prices are weak. Only prop to current quotations is export; and it's tapering off.

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LEADERS IN IRON AND STEEL SCRAP SINCE 1889

SCRAP PRICES

(Effective Dec. 27, 1957)

Pittsburgh

No. 1 hvy. melting	\$32.00 to \$33.00
No. 2 hvy. melting	30.00 to 31.00
No. 1 dealer bundles	32.00 to 33.00
No. 1 factory bundles	34.00 to 35.00
No. 2 bundles	28.00 to 29.00
No. 1 busheling	32.00 to 33.00
Machine shop turn.	16.00 to 17.00
Mixed bor. and ms. turn.	16.00 to 17.00
Shoveling turnings	20.00 to 21.00
Cast iron borings	20.00 to 21.00
Low phos. punch'gs plate	35.00 to 36.00
Heavy turnings	31.00 to 32.00
No. 1 RR hvy. melting	36.00 to 37.00
Scrap rails, random lgth.	47.00 to 48.00
Rails 2 ft and under	55.00 to 56.00
RR steel wheels	45.00 to 46.00
RR spring steel	45.00 to 46.00
RR couplers and knuckles	45.00 to 46.00
No. 1 machinery cast.	50.00 to 51.00
Cupola cast.	39.00 to 40.00
Heavy breakable cast.	37.00 to 38.00

Chicago

No. 1 hvy. melting	\$30.00 to \$31.00
No. 2 hvy. melting	28.00 to 29.00
No. 1 dealer bundles	30.00 to 31.00
No. 1 factory bundles	35.00 to 36.00
No. 2 bundles	19.00 to 20.00
No. 1 busheling	30.00 to 31.00
Machine shop turn.	15.00 to 16.00
Mixed bor. and turn.	17.00 to 18.00
Shoveling turnings	17.00 to 18.00
Cast iron borings	17.00 to 18.00
Low phos. forge crops	46.00 to 47.00
Low phos. punch'gs plate	42.00 to 43.00
Low phos. 3 ft and under	41.00 to 42.00
No. 1 RR hvy. melting	35.00 to 36.00
Scrap rails, random lgth.	43.00 to 44.00
RR rolling rails	50.00 to 51.00
Rails 2 ft and under	49.00 to 50.00
Locomotive tires cut	45.00 to 46.00
Cut bolsters & side frames	42.00 to 43.00
Angles and splice bars	47.00 to 48.00
RR steel car axles	50.00 to 51.00
RR couplers and knuckles	44.00 to 45.00
No. 1 machinery cast.	43.00 to 44.00
Cupola cast.	38.00 to 39.00
Heavy breakable cast.	36.00 to 37.00
Cast iron brake shoe	36.00 to 37.00
Cast iron wheels	38.00 to 40.00
Malleable	49.00 to 50.00
Stove plate	36.00 to 37.00
Steel car wheels	45.00 to 46.00

Philadelphia Area

No. 1 hvy. melting	\$34.00 to \$37.00
No. 2 hvy. melting	30.00 to 33.00
No. 1 dealer bundles	34.00 to 37.00
No. 2 bundles	24.00 to 27.00
No. 1 busheling	34.00 to 37.00
Machine shop turn.	18.00 to 19.00
Mixed bor. short turn.	21.00 to 22.00
Cast iron borings	22.00 to 23.00
Shoveling turnings	22.00 to 23.00
Clean cast. chem. borings	30.00 to 31.00
Low phos. 5 ft and under	39.00 to 40.00
Low phos. 2 ft and under	40.00 to 41.00
Low phos. punch'gs	40.00 to 41.00
Elec. furnace bundles	36.00 to 37.00
Heavy turnings	30.00 to 31.00
RR steel wheels	45.00 to 46.00
RR spring steel	45.00 to 46.00
Rails 18 in. and under	63.00 to 64.00
Cupola cast.	36.00 to 37.00
Heavy breakable cast.	36.00 to 37.00
Cast iron car wheels	40.00 to 41.00
Malleable	55.00 to 56.00
Unstripped motor blocks	32.00 to 33.00
No. 1 machinery cast.	48.00 to 49.00

Cleveland

No. 1 hvy. melting	\$27.00 to \$28.00
No. 2 hvy. melting	21.00 to 22.00
No. 1 dealer bundles	27.00 to 28.00
No. 1 factory bundles	31.00 to 32.00
No. 2 bundles	20.00 to 21.00
No. 1 busheling	27.00 to 28.00
Machine shop turn.	10.00 to 11.00
Mixed bor. and turn.	14.00 to 15.00
Shoveling turnings	14.00 to 15.00
Cast iron borings	14.00 to 15.00
Cut struct'l & plates, 2 ft & under	35.00 to 36.00
Drop forge flashings	27.00 to 28.00
Low phos. punch'gs plate	28.00 to 29.00
Foundry steel, 2 ft & under	33.00 to 34.00
No. 1 RR heavy melting	32.00 to 33.00
Rails 2 ft and under	53.00 to 54.00
Rails 18 in. and under	54.00 to 55.00
Railroad grate bars	14.00 to 15.00
Steel axle turnings	15.00 to 16.00
Railroad cast.	42.00 to 43.00
No. 1 machinery cast.	44.00 to 45.00
Stove plate	40.00 to 41.00
Malleable	54.00 to 55.00

Iron and Steel Scrap

Going prices of iron and steel scrap as obtained in the trade by THE IRON AGE based on representative tonnages. All prices are per gross ton delivered to consumer unless otherwise noted.

Youngstown

No. 1 hvy. melting	\$30.00 to \$31.00
No. 2 hvy. melting	24.00 to 25.00
No. 1 dealer bundles	30.00 to 31.00
No. 2 bundles	23.00 to 24.00
Machine shop turn.	13.00 to 14.00
Shoveling turnings	17.00 to 18.00
Cast iron borings	17.00 to 18.00
Low phos. plate	33.00 to 34.00

Buffalo

No. 1 hvy. melting	\$28.00 to \$29.00
No. 2 hvy. melting	25.50 to 26.50
No. 1 busheling	28.00 to 29.00
No. 1 dealer bundles	28.00 to 29.00
No. 2 bundles	22.50 to 23.50
Machine shop turn.	12.00 to 13.00
Mixed bor. and turn.	13.00 to 14.00
Shoveling turnings	15.00 to 16.00
Cast iron borings	14.00 to 15.00
Low phos. plate	34.00 to 35.00
Scrap rails, random lgth.	40.00 to 41.00
Rails 2 ft and under	50.00 to 51.00
RR steel wheels	37.00 to 38.00
RR spring steel	33.00 to 34.00
RR couplers and knuckles	33.00 to 34.00
No. 1 machinery cast.	40.00 to 41.00
No. 1 cupola cast.	35.00 to 36.00

Detroit

Brokers buying prices per gross ton, on cars:	
No. 1 hvy. melting	\$19.00 to \$20.00
No. 2 hvy. melting	16.00 to 17.00
No. 1 dealer bundles	19.00 to 20.00
No. 2 bundles	14.00 to 15.00
No. 1 busheling	18.00 to 19.00
Drop forge flashings	18.00 to 19.00
Machine shop turn.	7.00 to 8.00
Mixed bor. and turn.	9.00 to 10.00
Shoveling turnings	9.00 to 10.00
Cast iron borings	9.00 to 10.00
Low phos. punch'gs plate	19.00 to 20.00
No. 1 cupola cast.	27.00 to 28.00
Heavy breakable cast.	22.00 to 23.00
Stove plate	22.00 to 23.00
Automotive cast.	30.00 to 31.00

St. Louis

No. 1 hvy. melting	\$32.00 to \$33.00
No. 2 hvy. melting	29.00 to 30.00
No. 1 dealer bundles	32.00 to 33.00
No. 2 bundles	22.00 to 23.00
Machine shop turn.	15.00 to 16.00
Cast iron borings	17.00 to 18.00
Shoveling turnings	17.00 to 18.00
No. 1 RR hvy. melting	34.00 to 35.00
Rails, random lengths	40.00 to 41.00
Rails, 18 in. and under	47.00 to 48.00
Angles and splice bars	40.00 to 41.00
Std. steel car axles	43.00 to 44.00
RR specialties	42.00 to 43.00
Cupola cast.	42.00 to 43.00
Heavy breakable cast.	32.00 to 33.00
Cast iron brake shoes	37.00 to 38.00
Stove plate	36.50 to 37.50
Cast iron car wheels	32.00 to 33.00
Rolling rails	46.00 to 47.00
Unstripped motor blocks	32.00 to 33.00

Boston

Brokers buying prices per gross ton, on cars:	
No. 1 hvy. melting	\$23.00 to \$24.00
No. 2 hvy. melting	20.00 to 21.00
No. 1 dealer bundles	23.00 to 24.00
No. 2 bundles	14.00 to 15.00
No. 1 busheling	23.00 to 24.00
Elec. furnace, 3 ft & under	29.00 to 30.00
Machine shop turn.	8.50 to 9.50
Mixed bor. and short turn.	9.50 to 10.50
Shoveling turnings	10.00 to 11.00
Clean cast. chem. borings	16.00 to 17.00
No. 1 machinery cast.	32.00 to 33.00
Mixed cupola cast.	27.00 to 28.00
Heavy breakable cast.	25.00 to 26.00
Stove plate	26.00 to 27.00
Unstripped motor blocks	26.00 to 27.00

New York

Brokers buying prices per gross ton, on cars:	
No. 1 hvy. melting	\$30.00 to \$31.00
No. 2 hvy. melting	26.00 to 27.00
No. 2 dealer bundles	19.00 to 20.00
Machine shop turn.	11.00 to 12.00
Mixed bor. and turn.	13.00 to 14.00
Shoveling turnings	16.00 to 17.00
Clean cast. chem. borings	23.00 to 24.00
No. 1 machinery cast.	29.00 to 30.00
Mixed yard cast.	30.00 to 31.00
Charging box cast.	30.00 to 31.00
Heavy breakable cast.	30.00 to 31.00
Unstripped motor blocks	27.00 to 28.00

Birmingham

No. 1 hvy. melting	\$29.00 to \$30.00
No. 2 hvy. melting	24.00 to 25.00
No. 1 dealer bundles	29.00 to 30.00
No. 2 bundles	16.00 to 17.00
No. 1 busheling	29.00 to 30.00
Machine shop turn.	22.00 to 23.00
Shoveling turnings	12.00 to 13.00
Cast iron borings	48.00 to 49.00
Electric furnace bundles	35.00 to 36.00
Elec. furnace, 3 ft & under	33.00 to 34.00
Bar crops and plate	39.00 to 40.00
Structural and plate, 2 ft.	39.00 to 40.00
No. 1 RR hvy. melting	34.00 to 35.00
Scrap rails, random lgth.	41.00 to 42.00
Rails, 18 in. and under	40.00 to 41.00
Angles & splice bars	47.00 to 48.00
Rolling rails	47.00 to 48.00
No. 1 cupola cast.	48.00 to 49.00
Stove plate	47.00 to 48.00
Charging box cast.	22.00 to 23.00
Cast iron car wheels	36.00 to 37.00
Unstripped motor blocks	38.00 to 39.00

Cincinnati

Brokers buying prices per gross ton, on cars:	
No. 1 hvy. melting	\$29.00 to \$30.00
No. 2 hvy. melting	24.00 to 25.00
No. 1 dealer bundles	29.00 to 30.00
No. 2 bundles	20.00 to 21.00
Machine shop turn.	14.00 to 15.00
Mixed bor. and turn.	17.00 to 18.00
Shoveling turnings	17.00 to 18.00
Cast iron borings	37.00 to 38.00
Low phos., 18 in. and under	42.00 to 43.00
Rails, random length	42.00 to 43.00
Rails, 18 in. and under	52.00 to 53.00
No. 1 cupola cast.	36.00 to 37.00
Hvy. breakable cast.	32.00 to 33.00
Drop broken cast.	47.00 to 48.00

San Francisco

No. 1 hvy. melting	\$36.00
No. 2 hvy. melting	34.00
No. 1 dealer bundles	34.00
No. 2 bundles	26.00
Machine shop turn.	20.00
Cast iron borings	36.00
No. 1 RR hvy. melting	45.00
No. 1 cupola cast.	45.00

Los Angeles

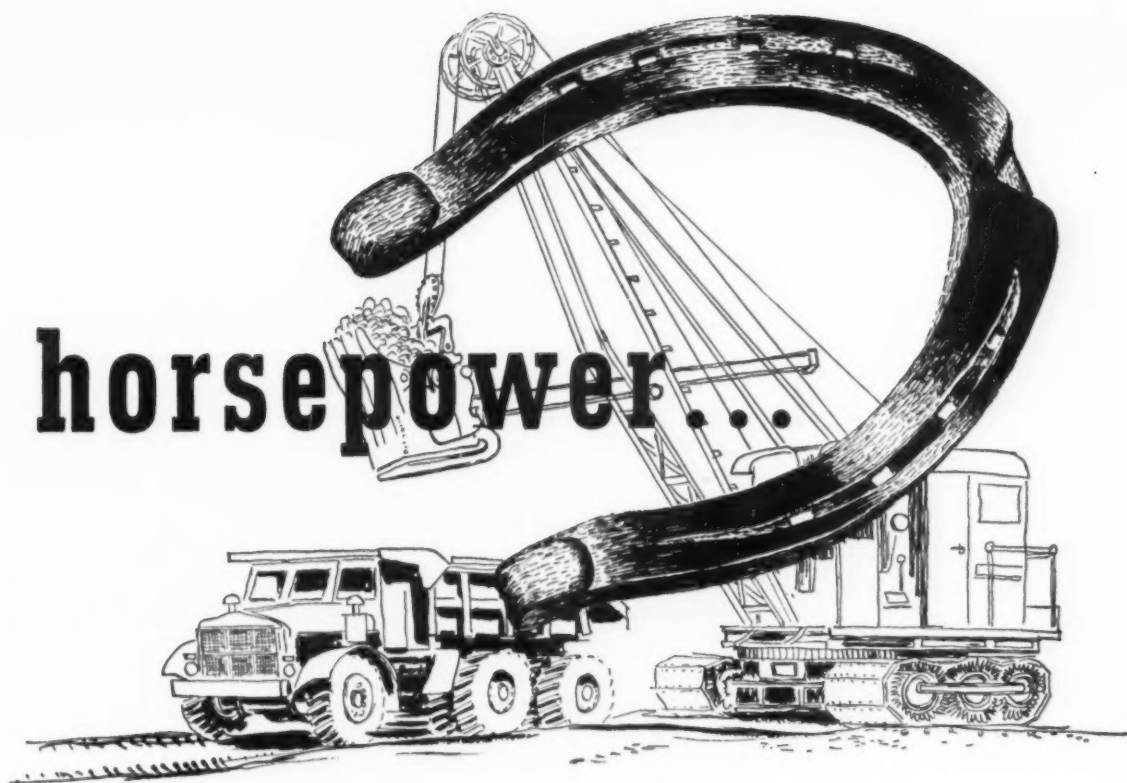
No. 1 hvy. melting	\$36.00
No. 2 hvy. melting	34.00
No. 1 dealer bundles	32.00
No. 2 bundles	24.00
Machine shop turn.	12.00
Shoveling turnings	15.00
Cast iron borings	15.00
Elec. furn. 1 ft and under (foundry)	47.00
No. 1 RR hvy. melting	37.00
No. 1 cupola cast.	41.00

Seattle

No. 1 hvy. melting	\$34.00
No. 2 hvy. melting	32.00
No. 2 bundles	26.00
No. 1 cupola cast.	38.00
Mixed yard cast.	38.00

Hamilton, Ont.

No. 1 hvy. melting	\$34.00
No. 2 hvy. melting	29.00
No. 1 dealer bundles	34.00
No. 2 bundles	24.00
Mixed steel scrap	24.00
Busheling	34.00
Bush., new fact, prep'd	28.00
Bush., new fact, unprep'd	19.00
Machine shop turn.	23.00
Short steel turn.	19.00
Mixed bor. and turn.	43.00
Rails, rerolling	44.00 to 49.00
Cast scrap	44.00 to 49.00



One of the aids to the development of nineteenth-century horsepower was the invention of a machine-made horseshoe—patented by Henry Burden, of Troy, New York, in 1835.

For today's vast power needs, horseshoes will not suffice. Motors, machines and engines of iron and steel have to be maintained, replaced, and increased in number, to meet the ever-growing power load demanded by commerce, industry, agriculture and armament. . . . The supply of scrap must continuously keep pace with the insistent needs for steel.

For the purchase or sale of iron or steel scrap . . .

phone or write "Your Chicago Broker"



231 S. La Salle St., Chicago

Telephone ANdover 3-3900

Industry Predicts For 1958

Leading nonferrous executives look ahead at 1958 with cautious optimism.

Most admit business was off last year, but expect an upturn sometime in 1958.

■ This week top nonferrous executives added up the results of 1957, and looked ahead to 1958.

Their opinions ranged from mild pessimism, not unlikely in view of the downtrend apparent for most metals, to cautious optimism.

Here is what executives had to say about 1957, and the outlook for 1958:

Frank L. Magee, president, Alcoa—"Aluminum Co. of America foresees an increase in aluminum consumption over 1957 totals during the year ahead. . . . Alcoa's output of primary aluminum amounted to approximately 710,000 tons during the past year . . . installed capacity to produce basic metal was rated at 792,500 tons annually at the close of 1957."

Richard S. Reynolds, Jr., president, Reynolds Metals Co.—"Despite the lower unit output of several of our industry's major customers, total usage of aluminum during 1957 will be off only slightly from the levels of 1956. The consensus of economic forecasts for 1958 indicate a slight decline of business during the first half and some improvement in the second, with volume for the full year at or about 1957 levels."

Donald A. Rhoades, vice president and general manager, Kaiser Aluminum & Chemical Corp.—"Basic economic factors are present

to make 1958 a year of advance for the aluminum industry."

"Total consumption of aluminum in the U. S. for 1957 is estimated at slightly under 4 billion lb. By 1965 we estimate that this figure will more than double—that the total consumption will be 8.4 billion lb. Of this 8.4 billion figure, our market researchers predict that the largest single users of aluminum in 1965 will be the building industry—1.6 billion lb; electrical industry—1.4 billion lb; and the transportation industry—1.3 billion lb."

U. S. copper producers, in cooperation with Copper & Brass Research Assn. — "With world supply of copper somewhat in excess of demand for the first time since World War II, producers and fabricators have been able to build up their inventories to the 30 to 60-day levels."

"Producer inventories increased 57,905 tons from January through September, reaching an industry total of 173,679 tons. The figure represents a 48 day supply."

"With relative stability a predicted long-term prospect . . . 1958 looks as bright as the metal itself."

Theodore E. Veltfort, managing director, Copper & Brass Research Assn.—"Brass mill shipments for 1957 were down about 10 pct from 1956. On the outlook for 1958, we are encouraged by the predicted upturn in housing starts and in home remodeling."

Kenneth W. Green, purchasing agent, Electric Storage Battery Co.—"The normal fall pickup in demand (for lead) never materialized. Stocks held by primary producers and consumers are quite modest, but any stocks are surplus

if there is little demand. The situation . . . calls for cautious buying until the demand picture clarifies."

Barter

The Commodity Credit Corp. of the U. S. Dept. of Agriculture has changed the rules for swapping surplus U. S. farm products for foreign strategic materials. The switch is not basic. It is aimed at making the program operational. Barter has been at a virtual standstill since May, when domestic contractors were told they must supply evidence that the transaction did not replace a cash sale. No one could figure out what constituted proof.

Basically, here's how the new rules will work:

No Proof for Group I — Any country on one list, called Group I, is eligible to receive surplus farm products for strategic material. These are countries which in the past have not been substantial export markets for these products, therefore no proof is required.

The list has four parts, one for each of the main farm products available — cotton, wheat, feed grains, and tobacco. It will be revised every three months.

Primary Prices

(cents per lb)	Current price	last price	date of change
Aluminum pig	26.00	25.00	8/1/57
Aluminum ingot	26.10	27.10	8/1/57
Copper (E)	27.00	28.50	9/3/57
Copper (CS)	28.00	25.00	12/16/57
Copper (L)	27.00	28.50	9/3/57
Lead, St. L.	12.00	13.30	12/2/57
Lead, N. Y.	13.00	13.50	12/2/57
Magnesium ingot	38.00	34.00	8/13/58
Magnesium pig	35.25	33.75	8/13/58
Nickel	74.00	84.50	12/8/58
Titanium sponge	165-250	165-225	5/5/57
Zinc, E. St. L.	10.00	10.50	7/1/57
Zinc, N. Y.	10.50	11.00	7/1/57

ALUMINUM: 99% ingot frt allwd. **COPPER:** (E) = electrolytic, (CS) = custom smelters, electrolytic. (L) = lake. **LEAD:** common grade. **MAGNESIUM:** 99.8% pig, Velasco, Tex. **NICKEL:** Port Colbourne, Canada. **ZINC:** prime western. **TIN:** see next week; other primary prices, pg. 366.



With KENNAMETAL* Die Grade K8 . . . Cost of MX[®] Abrasive Wheels dropped 2.64 cents per unit

Accurately kept production records of The Carborundum Company show that one set of Kennametal Grade K8 punches and die rings outlast six sets made from high speed steel. Cost of the punch and die rings, plus setup time and die regrinding time formerly added 3.1 cents per unit. By the introduction of Kennametal Grade K8 punch and die rings, this cost has now dropped to less than one-half cent per unit.

In addition to reducing your unit costs through extended die life and low maintenance, Kennametal Die Grades bring you additional benefits through their

ability to hold close tolerances for greater product uniformity.

Why not find out what Kennametal can do for the critical wear parts of your operation. A Kennametal Die Engineer will gladly work with you in selecting and applying the Kennametal Grade that best meets your requirements. Get more information on the six grades of Kennametal's "90" series or the three exclusive, non-galling "80" series . . . a total of nine Die Grades developed to meet every die need, including yours. Call your Kennametal Representative, or write KENNAMETAL INC., Latrobe, Penna.

*Trademark

3102



Disassembled die used for blanking and piercing arbor holes in Carborundum's MX abrasive wheels. Kennametal Die Grade K8 is now used for both the piercing punch and the punch ring that forms the outer diameter of the wheel.

NONFERROUS PRICES

MILL PRODUCTS

(Cents per lb unless otherwise noted)

ALUMINUM

(Base 30,000 lb, f.o.b. ship. pt., frt. allowed)

Flat Sheet (Mill Finish) and Plate
("F" temper except 6061-0)

Alloy	.003	.081	.136-249	.250-8
1100, 3003.....	46.6	44.3	43.6	42.7
6052.....	54.0	48.9	47.2	45.4
6061-0.....	51.4	47.0	45.2	45.1

Extruded Solid Shapes

Factor	6063 T-5	6063 T-6
6-8.....	45.0-46.8	60.4-64.1
12-14.....	45.7-47.2	61.3-65.8
24-28.....	49.0-49.5	72.1-76.8
36-38.....	55.0-55.6	96.2-99.8

Screw Machine Stock—2011-T-3

Size"	3/4	3/4-3/8	3/4-1	1 1/4-1 1/2
Price.....	63.0	62.5	61.0	58.6

Roofing Sheet, Corrugated (Per sheet, 26" wide base, 16,000 lb)

Length"→	72	96	120	144
.010 gage.....	\$1.420	\$1.693	\$2.367	\$2.839
.024 gage.....	1.774	2.366	2.957	3.549

MAGNESIUM

(F.o.b. shipping Pt., carload frt. allowed)

Sheet and Plate

Type↓	Gage→	250-5.00	250-2.00	.188	.061	.032
AZ31B Stand, Grade.....		67.9	69.0	77.0	108.1	
AZ31B Spec.....		93.3	95.7	108.7	171.3	
Tread Plate.....		70.6	71.7			
Tooling Plate.....		73.0				

Extruded Shapes

Factor→	6-8	12-14	24-26	36-38
Comm. Grade. (AZ31C).....	69.6	70.7	75.6	89.2
Spec. Grade... (AZ31B).....	84.6	85.7	90.6	104.2

Alloy Ingot

AZ91B (Die Casting)..... 37.25 (delivered)
AZ92A, AZ92A, AZ91C (Sand Casting) 40.75 (Velaeco, Tex.)

NICKEL, MONEL, INCONEL

(Base prices, f.o.b. mill)

	"A" Nickel	Monel	Inconel
Sheet, CR.....	126	106	121
Strip, CR.....	124	108	123
Rod, bar, HR.....	107	89	109
Angles, HR.....	107	89	109
Plates, HR.....	120	106	121
Seamless tube.....	157	129	200
Shot, blocks.....		87	

COPPER, BRASS, BRONZE

(Freight included in 5000 lbs)

	Sheet	Wire	Rod	Tube
Copper	50.13	.....	47.36	50.33
Brass, 70/30.....	44.03	44.56	45.36	46.03
Brass, Low	46.50	47.04	46.44	49.31
Brass, R L	47.37	47.91	47.31	50.18
Brass, Naval	48.27	.....	42.56	51.66
Monis Metal	46.39	.....	42.30	.....
Comm. Bs.	48.78	49.33	48.73	51.34
Mang. Bs.	52.01	.....	46.11	.....
Phos. Bs. 5%	69.07	.....	69.57	.....

Free Cutting Brass Rod..... 32.30

TITANIUM

(10,000 lb base, f.o.b. mill)

Sheet and strip, commercially pure, \$9.50-\$10.60; alloy, \$14.75; Plate, HR, commercially pure, \$8.00-\$8.75; alloy, \$10.75. Wire, rolled and/or drawn, commercially pure, \$7.50-\$8.00; alloy \$10.50; Bar, HR or forged, commercially pure, \$6.15-\$6.40; alloy, \$6.15-\$6.35; billets, HR, commercially pure, \$5.00-\$6.25; alloy, \$6.00-\$6.20.

PRIMARY METAL

(Cents per lb unless otherwise noted)

Antimony, American, Laredo, Tex. 33.50
Beryllium aluminum 5% Be, Dollar per lb contained Be.....\$74.75
Beryllium copper, per lb conta'd Be.\$43.00
Beryllium 97% lump or beads, f.o.b. Cleveland, Reading.....\$71.50
Bismuth, ton lots.....\$ 2.25
Cadmium, del'd.....\$ 1.55
Calcium, 99.9%, small lots.....\$ 4.55
Chromium, 99.8% metallic basis...\$ 1.31
Cobalt, 97-99% (per lb).....\$2.00 to \$2.07
Germanium, per gm, f.o.b. Miami, Okla., refined.....\$9.50 to \$3.00
Gold, U. S. Treas. per troy oz.....\$35.00
Indium, 99.9%, dollars per troy oz...\$ 2.25
Iridium, dollars per troy oz.....\$80 to \$90
Lithium, 98%.....\$11.00 to \$14.00
Magnesium, sticks, 100 to 500 lb.... 59.00
Mercury, dollars per 76-lb flask, f.o.b. New York.....\$225 to \$230
Nickel oxide sinter at Copper Cliff, Ont., contained nickel..... 71.25
Palladium, dollars per troy oz.....\$23 to \$24
Platinum, dollars per troy oz.....\$77 to \$80
Rhodium.....\$120.00 to \$125.00
Silver ingots (¢ per troy oz).....89.625
Thorium, per kg.....\$43.00
Vanadium.....\$ 3.45
Zirconium sponge.....\$ 5.00

REMELTED METALS

Brass Ingot

(Cents per lb delivered, carloads)

85-5-5 ingot
No. 115..... 27.25
No. 120..... 26.25
No. 123..... 25.50
80-10-10 ingot
No. 395..... 31.25
No. 315..... 29.25
88-10-2 ingot
No. 210..... 33.25
No. 215..... 34.00
No. 245..... 30.75
Yellow ingot
No. 405..... 22.75
Manganese bronze
No. 421..... 24.50

Aluminum Ingot

(Cents per lb del'd 30,000 lb and over)

95-5 aluminum-silicon alloys
0.3% copper max..... 25.25-26.50
0.60 copper max..... 25.90-26.25
Piston alloys (No. 122 type) 24.25-25.00
No. 12 alum. (No. 2 grade)..... 22.90-23.00
108 alloy..... 22.25-23.50
195 alloy..... 25.25-26.75
13 alloy (0.60 copper max.)..... 25.00-26.25
AXS-679..... 22.25-23.50

Steel deoxidizing aluminum, notch bar granulated or shot

Grade 1—95-97 1/2%	23.00-24.00
Grade 2—92-95%	21.75-23.50
Grade 3—90-92%	20.50-21.50
Grade 4—85-90%	18.25-19.25

SCRAP METALS

Brass Mill Scrap

(Cents per pound, add 1¢ per lb for shipments of 20,000 lb and over)

	Heavy	Turnings
Copper.....	23 1/2	23 1/4
Yellow brass.....	17 1/2	15 1/2
Red brass.....	20 1/2	19 1/2
Comm. bronze.....	31	30 1/2
Mang. bronze.....	16 1/2	16 1/2
Yellow brass rod ends.....	17 1/2	

Customs Smelters Scrap

(Cents per pound carload lots, delivered to refinery)

No. 1 copper wire..... 20%
No. 2 copper wire..... 19%
Light copper..... 17%
Refinery brass..... 18%
Copper bearing material..... 15%
Dry copper content.

Ingot Makers Scrap

(Cents per pound carload lots, delivered to refinery)

No. 1 copper wire..... 20%
No. 2 copper wire..... 19%
Light copper..... 17%
No. 1 composition..... 19%
No. 1 comp. turnings..... 18%
Hvy. yellow brass solids..... 13%
Brass pipe..... 15%
Radiators..... 15%
Aluminum

Mixed old cast..... 13 1/2—14
Mixed new clips..... 16—16 1/2
Mixed turnings, dry..... 14—16

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Copper and Brass

No. 1 copper wire..... 18 1/2—18 3/4
No. 2 copper wire..... 16 1/2—16 3/4
Light copper..... 14 1/2—15 1/4
Auto radiators (unwanted)..... 11 1/2—12
No. 1 composition..... 15 1/2—16
No. 1 composition turnings..... 15—15 1/2
Cocks and faucets..... 12—12 1/2
Clean heavy yellow brass..... 11—11 1/2
Brass pipe..... 12 1/2—13
New soft brass clippings..... 11—13 1/2
No. 1 brass rod turnings..... 11 1/2—11 3/4

Aluminum

Alum. pistons and struts..... 5 1/2—6
Aluminum crankcases..... 10 1/2—11
1100 (2S) aluminum clippings..... 10 1/2—14 1/2
Old sheet and utensils..... 10 1/2—11
Borings and turnings..... 6 1/2—7
Industrial castings..... 10 1/2—11
2024 (24S) clippings..... 12—12 1/2

Zinc

New zinc clippings..... 4—4 1/2
Old zinc..... 3—3 1/2
Zinc routings..... 1 1/2—1 3/4
Old die cast scrap..... 1 1/2—1 3/4

Nickel and Monel

Pure nickel clippings..... 42-45
Clean nickel turnings..... 37-40
Nickel anodes..... 42-45
Nickel rod ends..... 42-45
New Monel clippings..... 28-39
Clean Monel turnings..... 20-23
Old sheet Monel..... 25-35
Nickel silver clippings, mixed..... 18
Nickel silver turnings, mixed..... 15

Lead

Soft scrap lead..... 8 1/2—9
Battery plates (dry)..... 3 1/2—3 3/4
Batteries, acid free..... 2 1/2—3

Miscellaneous

Block tin..... 75—76
No. 1 pewter..... 59—60
Auto babbitt..... 39—40
Mixed common babbitt..... 11—11 1/2
Solder joints..... 14 1/2—15
Siphon tops..... 12—12 1/2
Small foundry type..... 12—12 1/2
Monotype..... 11—11 1/2
Lino. and stereotype..... 10—10 1/2
Electrotype..... 7—7 1/2
Hand picked type shells..... 3—3 1/2
Lino. and stereo. dross..... 2 1/2—2 3/4
Electro dross..... 2 1/2—2 3/4

IRON AGE		Italics identify producers listed in key at end of table. Base prices, f.o.b. mill, in cents per lb., unless otherwise noted. Extras apply.												
STEEL PRICES		BILLETS, BLOOMS, SLABS			PIL-ING	SHAPES STRUCTURALS			STRIP					
		Carbon Re-rolling Net Ton	Carbon Forging Net Ton	Alloy Net Ton		Sheet Steel	Carbon	Hi Str. Low Alloy	Carbon Wide Flange	Hot-rolled	Cold-rolled	Hi Str. H.R. Low Alloy	Hi Str. C.R. Low Alloy	Alloy Hot-rolled	Alloy Cold-rolled
EAST	Bethlehem, Pa.			\$114.00 B3		5.325 B3	7.80 B3	5.325 B3						
	Buffalo, N. Y.	\$77.50 R3, B3	\$96.00 R3, B3	\$114.00 R3, B3	6.225 B3	5.325 B3	7.80 B3	5.325 B3	4.925 R3, B3	7.15 S10	7.325 B3			
	Phila., Pa.									7.70 P15				
	Harrison, N. J.													15.05 C11
	Conshohocken, Pa.		\$101.00 A2	\$121.00 A2					4.975 A2	7.20 A2	7.325 A2			
	New Bedford, Mass.									7.60 R6				
	Johnstown, Pa.	\$77.50 B3	\$96.00 B3	\$114.00 B3		5.325 B3	7.80 B3							
	Boston, Mass.									7.70 T8				15.40 T8
	New Haven, Conn.									7.60 D1				
	Baltimore, Md.									7.15 T8				
	Phoenixville, Pa.					5.325 P2		5.325 P2						
	Sparrows Pt., Md.								4.925 B3		7.325 B3			
	Bridport, Wallingford, Conn.			\$114.00 N8						7.60 W1				
Pawtucket, R. I. Worcester, Mass.									7.70 N7 7.70 A5				15.40 N7 15.20 T8	
MIDDLE WEST	Alton, Ill.								5.125 L1					
	Ashland, Ky.								4.925 A7					
	Canton-Massillon, Dover, Ohio		\$96.00 R3	\$114.00 R3, T3						7.15 G4		10.45 G4		14.85 C11
	Chicago, Ill. Franklin Park, Ill. Evanston, Ill.	\$77.50 U1, R3	\$96.00 U1, R3, W8	\$114.00 U1, R3, W8	6.225 U1	5.275 U1, W8, P15	7.75 U1, Y1, W8	5.275 U1	4.925 W8, N4, A1	7.25 A1, T8, M8			8.10 W8, S9, J3	15.05 A1, S9, G4
	Cleveland, Ohio									7.15 A5, J3		10.45 A5	8.10 J3	
	Detroit, Mich.			\$114.00 R5					5.025 G3, M2	7.25 M2, D1, D2, G3, P11	7.425 G3	10.60 D2, 10.55 G3	8.10 G3	
	Anderson, Ind.									7.15 G4				
	Duluth, Minn.													
	Gary, Ind. Harbor, Indiana	\$77.50 U1	\$96.00 U1	\$114.00 U1, Y1		5.275 U1, J3	7.75 U1, J3	5.275 J3	4.925 U1, J3, Y1	7.15 Y1	7.325 U1, J3, Y1	10.60 Y1	8.10 U1, Y1	
	Sterling, Ill.	\$77.50 N4				5.275 N4			5.025 N4					
	Indianapolis, Ind.									7.30 J3				15.20 J3
	Newport, Ky.												8.10 A9	
	Middletown, Ohio													
Niles, Warren, Ohio Sharon, Pa.		\$96.00 S1, C10	\$114.00 C10, S1					4.925 R3, S1	7.15 R3, T4, S1	7.325 R3, S1	10.50 S1, 10.45 R3	8.10 S1	15.05 S1	
Pittsburgh, Pa. Midland, Pa. Butler, Pa. Aliquippa, Pa.	\$77.50 U1, P6	\$96.00 U1, C11, P6	\$114.00 U1, C11, B7	6.225 U1	5.275 U1, J3	7.75 U1, J3	5.275 U1	4.925 P6	7.15 J3, B4, S1			8.10 S9	15.05 S9	
Weirton, Wheeling, Follansbee, W. Va.				6.225 W3	5.275 W3			4.925 W3	7.15 W3, F3	7.325 W3	10.50 W3			
Youngstown, Ohio	\$77.50 R3	\$96.00 Y1, C10	\$114.00 Y1			7.75 Y1			7.15 Y1, J3	7.325 U1, Y1	10.65 Y1	8.10 U1, Y1	15.05 J3, 10.65 Y1	
WEST	Fontana, Cal.	\$88.00 K1	\$105.50 K1	\$135.00 K1		6.075 K1	8.55 K1	6.225 K1	5.675 K1	9.00 K1				
	Geneva Utah		\$96.00 C7			5.275 C7	7.75 C7							
	Kansas City, Mo.					5.375 S2	7.85 S2						8.35 S2	
	Los Angeles, Torrance, Cal.		\$105.50 B2	\$134.00 B2		5.975 C7, B2	8.45 B2		5.675 C7, B2	9.05 J3			9.30 B2	17.25 J3
	Minnequa, Colo.					5.575 C6			6.025 C6	9.10 K1				
	Portland, Ore.					6.025 O2								
	San Francisco, Niles, Pittsburg, Cal.		\$105.50 B2			5.925 B2	8.40 B2		5.675 C7, B2					
	Seattle, Wash.		\$109.50 B2			6.025 B2	8.50 B2		5.925 B2					
	Atlanta, Ga.					5.475 A8			5.125 A8					
	Fairfield, Ala. City, Birmingham, Ala.	\$77.50 T2	\$96.00 T2			5.275 T2, R3, C16	7.75 T2		4.925 T2, R3, C16		7.325 T2			
SOUTH	Houston, Lone Star, Texas		\$101.00 S2	\$119.00 S2		5.375 S2	7.85 S2						8.35 S2	

(Effective Dec. 26, 1957)

IRON AGE		<i>Italics identify producers listed in key at end of table. Basic prices, f.o.b. mill, in cents per lb., unless otherwise noted. Extras apply.</i>											
STEEL PRICES		SHEETS							WIRE ROD	TINPLATE†		BLACK PLATE	
		Hot-rolled 18 ga. & hvyr.	Cold- rolled	Galvanized	Enamel- ing	Long Terne	Hi Str. Low Alloy H.R.	Hi Str. Low Alloy C.R.	Hi Str. Low Alloy Galv.		Cokes* 1.25 lb. base box	Electro* 0.25 lb. base box	Holloware Enameling 29 ga.
EAST	Bethlehem, Pa.												
	Buffalo, N. Y.	4.925 B3	6.05 B3				7.275 B3	8.975 B3		6.15 W6	† Special coated mfg. terne deduct 50¢ from 1.25-lb. coke base box price. Can-making quality blackplate 55 to 128 lb. deduct \$2.20 from 1.25 lb. coke base box. * COKES: 1.50-lb. add 25¢. ELECTRO: 0.50-lb. add 25¢; 0.75-lb. add 65¢; 1.00-lb. add \$1.00. Differ- ential 1.00 lb. 0.25 lb. add 65¢.		
	Claymont, Del.												
	Coatesville, Pa.												
	Conshohocken, Pa.	4.975 A2	6.10 A2				7.325 A2						
	Harrisburg, Pa.												
	Hartford, Conn.												
	Johnstown, Pa.								6.15 B3				
	Fairless, Pa.	4.975 U1	6.10 U1				7.325 U1	9.025 U1		\$10.15 U1	\$8.85 U1		
	New Haven, Conn.												
	Phoenixville, Pa.												
Sparrows Pt., Md.	4.925 B3	6.05 B3	6.60 B3			7.275 B3	8.975 B3	9.725 B3	6.25 B3	\$10.15 B3	\$8.85 B3		
Worcester, Mass.									6.45 A5				
Trenton, N. J.													
MIDDLE WEST	Alton, Ill.									6.35 L1			
	Ashland, Ky.	4.925 A7		6.60 A7	6.625 A7								
	Canton-Massillon, Dover, Ohio			6.60 R3, R1									
	Chicago, Joliet, Ill.	4.925 W8, A1					7.275 U1			6.15 A5, R3, W8, N4, K2			
	Sterling, Ill.									6.25 N4, K2			
	Cleveland, Ohio	4.925 R3, J3	6.05 R3, J3		6.625 R3		7.275 R3, J3	8.975 R3, J3		6.15 A5			
	Detroit, Mich.	5.025 G3, M2	6.15 G3 6.05 M2				7.375 G3	9.075 G3					
	Newport, Ky.	4.925 A1	6.05 A1										
	Gary, Ind. Harbor, Indiana	4.925 U1, I3, Y1	6.05 U1, I3, Y1	6.60 U1, I3	6.625 U1, I3, Y1	7.00 U1	7.275 U1, Y1, I3	8.975 U1, Y1		6.15 Y1	\$10.05 U1, Y1	\$8.75 I3, U1, Y1	7.50 U1, Y1
	Granite City, Ill.	5.125 G2	6.25 G2	6.80 G2	6.825 G2							\$8.85 G2	7.60 G2
	Kokomo, Ind.			6.70 C9						6.25 C9			
	Mansfield, Ohio		6.05 E2			7.00 E2							
	Middletown, Ohio		6.05 A7	6.60 A7	6.625 A7	7.00 A7							
	Niles, Warren, Ohio Sharon, Pa.	4.925 R3, N3, S1	6.05 R3	6.60 R3	6.625 N3, S1	7.00 N3, S1, R3	7.275 R3	8.975 S1, R3				\$8.75 R3	
	Pittsburgh, Pa. Midland, Pa. Butler, Pa. Donora, Pa. Aliquippa, Pa.	4.925 U1, J3, P6	6.05 U1, J3, P6	6.60 U1, J3	6.625 U1		7.275 U1, J3	8.975 U1, J3	9.725 U1	6.15 A5, J3, P6	\$10.05 U1, J3	\$8.75 U1, J3	7.50 U1, J3
	Portsmouth, Ohio	4.925 P7	6.05 P7							6.15 P7			
	Weirton, Wheeling, Follansbee, W. Va.	4.925 W3, W5	6.05 W3, F3, W5	6.60 W3, W5		7.00 W3, W5	7.275 W3	8.975 W3			\$10.05 W5, W3	\$8.75 W5, W3	7.50 W5
Youngstown, Ohio	4.925 U1, Y1	6.05 Y1		6.625 Y1		7.275 Y1	8.975 Y1		6.15 Y1				
WEST	Fontana, Cal.	5.675 K1	7.30 K1				8.025 K1	10.275 K1			\$10.00 K1	\$9.50 K1	
	Geneva, Utah	5.025 C7											
	Kansas City, Mo.									6.40 S2			
	Los Angeles, Torrance, Cal.									6.95 B2			
	Minnequa, Colo.									6.40 C6			
	San Francisco, Niles, Pittsburgh, Cal.	5.625 C7	7.00 C7	7.35 C7						6.95 C7	\$10.00 C7	\$9.50 C7	
	Seattle, Wash.												
SOUTH	Atlanta, Ga.												
	Fairfield, Ala. Alabama City, Ala.	4.925 T2, R3	6.05 T2, R3	6.60 T2, R3						6.15 T2, R3	\$10.15 T2	\$8.85 T2	
	Houston, Tex.									6.40 S2			

(Effective Dec. 26, 1957)

IRON AGE

Italics identify producers listed in key at end of table. Base prices, f.o.b. mill, in cents per lb., unless otherwise noted. Extras apply.

STEEL
PRICES

BARS

PLATES

WIRE

		Carbon Steel	Reinforcing	Cold Finished	Alloy Hot-rolled	Alloy Cold Drawn	Hi Str. H.R. Low Alloy	Carbon Steel	Floor Plate	Alloy	Hi Str. Low Alloy	Mfrs' Bright
EAST	Bethlehem, Pa.				6.475 B3	8.775 B3	7.925 B3					
	Buffalo, N. Y.	5.425 R3,B3	5.425 R3,B3	7.35 B5	6.475 B3,R3	8.775 B3,B5	7.925 B3	5.10 B3		7.20 B3		7.65 W6
	Claymont, Del.							5.10 C4		7.20 C4	7.625 C4	
	Coatesville, Pa.							5.10 L4		7.20 L4	7.925 L4	
	Conshohocken, Pa.							5.20 A2	6.175 A2	7.20 A2	7.625 A2	
	Harrisburg, Pa.							5.10 P2	6.275 P2			
	Milton, Pa.	5.575 M7	5.575 M7									
	Hartford, Conn.			7.90 R3		9.075 R3	7.925 B3					
	Johmatown, Pa.	5.425 B3	5.425 B3		6.475 B3			5.10 B3		7.20 B3	7.625 B3	7.65 B3
	Fairless, Pa.	5.575 U1	5.575 U1		6.625 U1							
	Newark, N. J.			7.75 W10		8.95 W10						
	Camden, N. J.			7.75 P10		8.95 P10						
	Bridgeport, Conn.			7.85 W10	6.55 N8	8.925 N8						
	Pulman, Conn.			7.80 J3								
	Willimantic, Conn.											
MIDDLE WEST	Sparrows Pt., Md.		5.425 B3					5.10 B3		7.20 B3	7.625 B3	7.75 B3
	Palmer, Worcester, Readville, Mass.			7.85 B5,C14		9.075 A5,B5						7.95 A5, W6
	Mansfield, Mass.											
	Spring City, Pa.			7.75 K4		8.95 K4						
	Alton, Ill.	5.625 L1										7.85 L1
	Ashland, Newport, Ky.							5.10 A7, A1		7.20 A1		
	Canton, Massillon, Ohio			7.30 R3,R2	6.475 R3,T5	8.775 R3,R2, T5						
	Chicago, Joliet, Waukegan, Ill.	5.425 U1,R3, W8,N4,P13	5.425 U1,R3, N4,P13	7.30 A5, W10,W8 B5,L2,N9	6.475 U1,R3, W8	8.775 A5, W10,W8 L2,N8,B5	7.925 U1,W8	5.10 U1,A1, W8,I3	6.175 U1	7.20 U1,W8	7.625 U1,W8	7.65 A5,R3, W8,N4, K2,W7
	Harvey, Ill.											
	Cleveland, Ohio	5.425 R3	5.425 R3	7.30 A5,C13 C18		8.775 A5, C13,C18	7.925 R3	5.20 R3,J3	6.175 J3		7.625 R3, J3	7.65 A5, C13
	Elyria, Ohio											
	Detroit, Mich.	5.525 G3	5.775 G3	7.55 P3 7.50 P8,B5	6.475 R5 6.575 G3	8.775 R5 8.975 B5,P3, P8	8.025 G3	5.20 G3		7.35 G3		
	Duluth, Minn.											7.65 A5
	Gary, Ind. Harbor, Crawfordsville, Hammond, Ind.	5.425 U1,I3, Y1	5.425 U1,I3, Y1	7.30 R3,J3	6.475 U1,I3, Y1	8.775 R3,M4	7.925 U1, Y1	5.10 U1,I3, Y1	6.175 J3,I3	7.20 U1,Y1	7.625 U1, Y1,I3	7.75 M4
	Granite City, Ill.							5.30 G2				
	Kokomo, Ind.											7.75 C9
	Sterling, Ill.	5.525 N4	5.525 N4					5.10 N4				7.75 K2
WEST	Niles, Warren, Ohio Sharon, Pa.			7.30 C10	6.475 C10,S1	8.775 C10	7.925 S1	5.10 R3,S1		7.20 S1	7.625 R3, S1	
	Pittsburgh, Midland, Donora, Aliquippa, Pa.	5.425 U1,J3	5.425 U1,J3	7.30 A5,B4, R3,J3,C11, W10,S9,C8	6.475 U1,J3, C11,B7	8.775 A5, W10,R3,S9, C11,C8	7.925 U1,J3	5.10 U1,J3	6.175 U1	7.20 U1,J3, B7	7.625 U1,J3, B7	7.65 A5, J3,P6
	Portsmouth, Ohio											7.65 P7
	Weirton, Wheeling, Follansbee, W. Va.							5.10 W5				
	Youngstown, Ohio	5.425 U1,R3, Y1	5.425 U1,R3, Y1	7.30 A5,Y1, F2	6.475 U1,Y1	8.775 Y1,F2	7.925 U1,Y1	5.10 U1,R3, Y1		7.20 Y1	7.625 U1, R3,Y1	7.65 Y1
	Emeryville, Cal.	6.175 J5 6.125 K1	6.175 J5 6.125 K1		7.525 K1		8.625 K1	5.90 K1		8.00 K1	8.425 K1	
	Fontana, Cal.											
	Geneva, Utah							5.10 C7			7.625 C7	
	Kansas City, Mo.	5.675 S2	5.675 S2		6.725 S2		8.175 S2					7.90 S2
	Los Angeles, Torrance, Cal.	6.125 C7,B2	6.125 C7,B2	8.75 R3,P14	7.525 B2	10.65 P14	8.625 B2					8.60 B2
SOUTH	Minnequa, Colo.	5.875 C6	5.875 C6					5.95 C6				7.90 C6
	Portland, Ore.	6.175 O2	6.175 O2									
	San Francisco, Niles, Pittsburg, Cal.	6.125 C7 6.175 B2	6.125 C7 6.175 B2				8.675 B2					8.60 C7,C6
	Seattle, Wash.	6.175 B2,N6	6.175 B2				8.675 B2	6.90 B2		8.10 B2	8.525 B2	
	Atlanta, Ga.	5.625 A8	5.625 A8									7.85 A8
	Fairfield, Ala. City, Birmingham, Ala.	5.425 T2,R3, C16	5.425 T2,R3, C16,S11	7.90 C16			7.925 T2	5.10 T2,R3			7.625 T2	7.65 T2,R3
	Houston, Ft. Worth, Lone Star, Tex.	5.675 S2	5.675 S2		6.725 S2		8.175 S2	5.20 S2 5.45 L3		7.30 S2	7.725 S2	7.90 S2

STEEL PRICES

Key to Steel Producers

With Principal Offices

- A1 Acme Steel Co., Chicago
A2 Alan Wood Steel Co., Conshohocken, Pa.
A3 Allegheny Ludlum Steel Corp., Pittsburgh
A4 American Cladmetals Co., Carnegie, Pa.
A5 American Steel & Wire Div., Cleveland
A6 Angel Nail & Chaplet Co., Cleveland
A7 Armco Steel Corp., Middletown, Ohio
A8 Atlantic Steel Co., Atlanta, Ga.
A9 Acme-Newport Steel Co., Newport, Ky.
B1 Babcock & Wilcox Tube Div., Beaver Falls, Pa.
B2 Bethlehem Pacific Coast Steel Corp., San Francisco
B3 Bethlehem Steel Co., Bethlehem, Pa.
B4 Blair Strip Steel Co., New Castle, Pa.
B5 Bliss & Laughlin, Inc., Harvey, Ill.
B6 Brook Plant, Wickwire-Spencer Steel Div., Birdsboro, Pa.
B7 A. M. Byers, Pittsburgh
B8 Braeburn Alloy Steel Corp., Braeburn, Pa.
C1 Calstrip Steel Corp., Los Angeles
C2 Carpenter Steel Co., Reading, Pa.
C3 Central Iron & Steel Co., Harrisburg, Pa.
C4 Claymont Products Dept., Claymont, Del.
C6 Colorado Fuel & Iron Corp., Denver
C7 Columbia Geneva Steel Div., San Francisco
C8 Columbia Steel & Shifting Co., Pittsburgh
C9 Continental Steel Corp., Kokomo, Ind.
C10 Copperweld Steel Co., Pittsburgh, Pa.
C11 Crucible Steel Co. of America, Pittsburgh
C12 Cumberland Steel Co., Cumberland, Md.
C13 Cuyahoga Steel & Wire Co., Cleveland
C14 Compressed Steel Shifting Co., Readville, Mass.
C15 G. O. Carlson, Inc., Thorndale, Pa.
C16 Connors Steel Div., Birmingham
C17 Chester Blast Furnace, Inc., Chester, Pa.
C18 Cold Drawn Steel Plant, Western Automatic Machine Screw Co., Elyria, O.
D1 Detroit Steel Corp., Detroit
D2 Dearborn Div., Sharon Steel Corp.
D3 Driver Harris Co., Harrison, N. J.
D4 Dickson Weatherproof Nail Co., Evanston, Ill.
E1 Eastern Stainless Steel Corp., Baltimore
E2 Empire Steel Co., Mansfield, O.
F1 Firth Sterling, Inc., McKeesport, Pa.
F2 Fitzsimons Steel Corp., Youngstown
F3 Follansbee Steel Corp., Follansbee, W. Va.

- G2 Granite City Steel Co., Granite City, Ill.
G3 Great Lakes Steel Corp., Detroit
G4 Greer Steel Co., Dover, O.
H1 Hanna Furnace Corp., Detroit
I2 Ingersoll Steel Div., Chicago
I3 Inland Steel Co., Chicago
I4 Interlake Iron Corp., Cleveland
J1 Jackson Iron & Steel Co., Jackson, O.
J2 Jessop Steel Corp., Washington, Pa.
J3 Jones & Laughlin Steel Corp., Pittsburgh
J4 Joslyn Mfg. & Supply Co., Chicago
J5 Judson Steel Corp., Emeryville, Calif.
K1 Kaiser Steel Corp., Fontana, Cal.
K2 Keystone Steel & Wire Co., Peoria
K3 Koppers Co., Granite City, Ill.
K4 Keystone Drawn Steel Co., Spring City, Pa.
L1 Laclede Steel Co., St. Louis
L2 La Salle Steel Co., Chicago
L3 Lone Star Steel Co., Dallas
L4 Lukens Steel Co., Coatesville, Pa.
M1 Mahoning Valley Steel Co., Niles, O.
M2 McLouth Steel Corp., Detroit
M3 Mercer Tube & Mfg. Co., Sharon, Pa.
M4 Mid States Steel & Wire Co., Crawfordsville, Ind.
M6 Mystic Iron Works, Everett, Mass.
M7 Milton Steel Products Div., Milton, Pa.
M8 Mill Strip Products Co., Evanston, Ill.
N1 National Supply Co., Pittsburgh
N2 National Tube Div., Pittsburgh
N3 Niles Rolling Mill Div., Niles, O.
N4 Northwestern Steel & Wire Co., Sterling, Ill.
N6 Northwest Steel Rolling Mills, Seattle
N7 Newman Crosby Steel Co., Pawtucket, R. I.
N8 Carpenter Steel of New England, Inc., Bridgeport, Conn.
N9 Nelson Steel & Wire Co.
O1 Oliver Iron & Steel Co., Pittsburgh
O2 Oregon Steel Mills, Portland
P1 Page Steel & Wire Div., Monessen, Pa.
P2 Phoenix Iron & Steel Co., Phoenixville, Pa.
P3 Pilgrim Drawn Steel Div., Plymouth, Mich.
P4 Pittsburgh Coke & Chemical Co., Pittsburgh
P5 Pittsburgh Screw & Bolt Co., Pittsburgh
P6 Pittsburgh Steel Co., Pittsburgh
P7 Portsmouth Div., Detroit Steel Corp., Detroit

- P8 Plymouth Steel Co., Detroit
P9 Pacific States Steel Co., Niles, Cal.
P10 Precision Drawn Steel Co., Camden, N. J.
P11 Production Steel Strip Corp., Detroit
P13 Phoenix Mfg. Co., Joliet, Ill.
P14 Pacific Tube Co.
P15 Philadelphia Steel and Wire Corp.
R1 Reeves Steel & Mfg. Co., Dover, O.
R2 Reliance Div., Eaton Mfg. Co., Massillon, O.
R3 Republic Steel Corp., Cleveland
R4 Roebing Sons Co., John A., Trenton, N. J.
R5 J. & L. Steel Co., Stainless Div.
R6 Rodney Metals, Inc., New Bedford, Mass.
R7 Rome Strip Steel Co., Rome, N. Y.
S1 Sharon Steel Corp., Sharon, Pa.
S2 Sheffield Steel Div., Kansas City
S3 Shenango Furnace Co., Pittsburgh
S4 Simonds Saw and Steel Co., Fitchburg, Mass.
S5 Sweet's Steel Co., Williamsport, Pa.
S6 Standard Forging Corp., Chicago
S7 Stanley Works, New Britain, Conn.
S8 Superior Drawn Steel Co., Monaca, Pa.
S9 Superior Steel Corp., Carnegie, Pa.
S10 Seneca Steel Service, Buffalo
S11 Southern Electric Steel Co., Birmingham
T1 Tonawanda Iron Div., N. Tonawanda, N. Y.
T2 Tennessee Coal & Iron Div., Fairfield
T3 Tennessee Products & Chem. Corp., Nashville
T4 Thomas Strip Div., Warren, O.
T5 Timken Steel & Tube Div., Canton, O.
T7 Texas Steel Co., Fort Worth
T8 Thompson Wire Co., Boston
U1 United States Steel Corp., Pittsburgh
U2 Universal Cyclops Steel Corp., Bridgeville, Pa.
U3 Ulbrich Stainless Steels, Wallingford, Conn.
U4 U. S. Pipe & Foundry Co., Birmingham
W1 Wallingford Steel Co., Wallingford, Conn.
W2 Washington Steel Corp., Washington, Pa.
W3 Weirton Steel Co., Weirton, W. Va.
W4 Wheatland Tube Co., Wheatland, Pa.
W5 Wheeling Steel Corp., Wheeling, W. Va.
W6 Wickwire Spencer Steel Div., Buffalo
W7 Wilson Steel & Wire Co., Chicago
W8 Wisconsin Steel Div., S. Chicago, Ill.
W9 Woodward Iron Co., Woodward, Ala.
W10 Wyckoff Steel Co., Pittsburgh
W12 Wallace Barnes Steel Div., Bristol, Conn.
Y1 Youngstown Sheet & Tube Co., Youngstown, O.

PIPE AND TUBING

Base discounts (per) f.o.b. mills. Base price about \$200 per net ton.

	BUTTWELD														SEAMLESS							
	1/2 In.		3/4 In.		1 In.		1 1/4 In.		1 1/2 In.		2 In.		2 1/2-3 In.		2 In.		2 1/2 In.		3 In.		3 1/2-4 In.	
	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.	Blk.	Gal.
STANDARD T. & C.																						
Sparrows Pt. B3	3.25	+12.0	6.25	+8.0	9.75	+3.50	12.25	+2.75	12.75	+1.75	13.25	+1.25	14.75	+1.50								
Youngstown R3	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50								
Fontana K1	+8.25	+23.5	+5.25	+19.5	+1.75	+15.00	0.75	+14.25	1.25	+11.25	1.75	+12.75	3.25	+13.00								
Pittsburgh J3	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50	*9.25	+24.25	*2.75	+19.50	*0.25	+17.0	1.25	+15.50
Alton, Ill. L1	3.25	+12.0	6.25	+8.0	9.75	+3.50	12.25	+2.75	12.75	+1.75	13.25	+1.25	14.75	+1.50								
Sharon M3	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50								
Fairless N2	3.25	+12.0	6.25	+8.0	9.75	+3.50	12.25	+2.75	12.75	+1.75	13.25	+1.25	14.75	+1.50								
Pittsburgh N1	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50	*9.25	+24.25	*2.75	+19.50	*0.25	+17.0	1.25	+15.50
Wheeling W3	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50								
Wheeland W4	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50	*9.25	+24.25	*2.75	+19.50	*0.25	+17.0	1.25	+15.50
Youngstown Y1	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50								
Indiana Harbor Y1	4.25	+11.0	7.25	+7.0	10.75	+2.50	13.25	+1.75	13.25	+0.75	14.25	+0.25	15.25	+1.00								
Lorain N2	5.25	+10.0	8.25	+6.0	11.75	+1.50	14.25	+0.75	14.75	0.25	15.25	0.75	16.75	0.50	*9.25	+24.25	*2.75	+19.50	*0.25	+17.0	1.25	+15.50
EXTRA STRONG PLAIN ENDS																						
Sparrows Pt. B3	7.75	+6.0	11.75	+2.0	14.75	2.50	15.25	1.25	15.75	2.25	16.25	2.75	16.75	1.50								
Youngstown R3	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50								
Fairless N2	7.75	+6.0	11.75	+2.0	14.75	2.50	15.25	1.25	15.75	2.25	16.25	2.75	16.75	1.50								
Fontana K1	+3.75	0.25								4.25		4.75		5.25								
Pittsburgh J3	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50	*7.75	+21.75	*0.25	+16.0	2.25	+13.50	7.25	+8.50
Alton, Ill. L1	7.75	+6.0	11.75	+2.0	14.75	2.50	15.25	1.25	15.75	2.25	16.25	2.75	16.75	1.50								
Sharon M3	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50								
Pittsburgh N1	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50	*7.75	+21.75	*0.25	+16.0	2.25	+13.50	7.25	+8.50
Wheeling W3	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50								
Wheeland W4	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50								
Youngstown Y1	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50	*7.75	+21.75	*0.25	+16.0	2.25	+13.50	7.25	+8.50
Indiana Harbor Y1	8.75	+5.0	12.75	+1.0	15.75	3.50	16.25	2.25	16.75	3.25	17.25	3.75	17.75	2.50								
Lorain N2	9.75	+4.0	13.75	list	16.75	4.50	17.25	3.25	17.75	4.25	18.25	4.75	18.75	3.50	*7.75	+21.75	*0.25	+16.0	2.25	+13.50	7.25	+8.50

Threads only, butt weld and seamless 2 1/2 pt. higher discount. Plain ends, butt weld and seamless, 3-in. and under, 5 1/2 pt. higher discount.
Galvanized discounts based on zinc price range of over 9c to 11c per lb. East St. Louis. For each 2c change in zinc, discounts vary as follows: 1/2, 3/4 and 1-in., 2 pt.; 1 1/4, 1 1/2 and 2-in., 1 1/2 pt.; 2 1/2 and 3-in., 1 pt., e.g., zinc price range of over 13c to 15c would lower discounts on 2 1/2 and 3-in. pipe by 2 points; zinc price in range over 7c to 9c would increase discounts. East St. Louis zinc price now 10c per lb.
(Effective Dec. 26, 1957)

TOOL STEEL

F.o.b. mill

W	Cr	V	Mo	Co	per lb	SAE
18	4	1	—	—	\$1.795	T-1
18	4	1	—	5	2.50	T-4
18	4	2	—	—	1.96	T-2
1.5	4	1.5	8	—	1.155	M-1
6	4	3	6	—	1.545	M-3
6	4	2	5	—	1.30	M-2
High-carbon chromium...						D-3, D-5
Oil hardened manganese						O-2
Special carbon						W-1
Extra carbon						W-1
Regular carbon						W-1

Warehouse prices on and east of Mississippi are 4¢ per lb higher. West of Mississippi, 6¢ higher.

CLAD STEEL

Base prices, cents per lb f.o.b.

Cladding	Plate (A3, J2, L4, C4)			Sheet (J2)
	10 pct	15 pct	20 pct	
302				37.50
304	37.95	42.25	46.70	40.00
316	44.40	49.50	54.50	58.75
321	40.05	44.60	49.30	47.25
347	42.40	47.55	52.80	57.00
405	29.85	33.35	36.85	
410	29.55	33.10	36.70	
430	29.80	33.55	37.25	

CR Strip (S9) Copper, 10 pct, 2 sides, 40.25; 1 side, 33.95.

RAILS, TRACK SUPPLIES

F.o.b. Mill Cents Per Lb	Std. Rails	Light Rails	Joint Bars	Track Spikes	Screw Spikes	Tie Plates	Track Bolts Unthreaded
Dessemer U/I	5.525	6.50	6.975				
Cleveland R3				9.75			14.75
So. Chicago R3							
Ensley T2	5.525	6.50		9.75		6.60	6.60
Fairfield T2	5.525	6.50					
Gary U/I							
Huntington C16	5.525	6.50	6.975	9.75		6.60	
Ind. Harbor J1							
Ind. Harbor Y1							
Johnstown B1	6.50						
Joliet U/I			6.975				
Kansas City S2				9.75			14.75
Lackawanna B1	5.525	6.50	6.975		14.50	6.60	14.75
Lebanon B1							
Minneapolis C6	5.525	7.00	6.975	9.75		6.60	14.75
Pittsburgh P5							
Pittsburgh J3						9.75	
Seattle B2						10.25	6.75 15.75
Steelton B1	5.525		6.975				6.60
Struthers Y1				9.75			6.75
Terrace C7							
Williamsport S5	6.50						
Youngstown R3				9.75			

COKE

Furnace, beehive (f.o.b.) Net-Ton
Connellsville, Pa. \$15.00 to \$15.75
Foundry, beehive (f.o.b.) \$17.50 to \$19.00

Foundry oven coke	
Buffalo, del'd	\$31.75
Detroit, f.o.b.	30.50
New England, del'd	31.55
Kearney, N. J., f.o.b.	29.75
Philadelphia, f.o.b.	29.50
Swedeland, Pa., f.o.b.	29.50
Lanesville, Ohio, f.o.b.	30.50
Erie, Pa., f.o.b.	30.50
Cleveland, del'd	32.65
Cincinnati, del'd	31.84
St. Paul, f.o.b.	29.75
St. Louis, f.o.b.	31.50
Birmingham, f.o.b.	28.85
Milwaukee, f.o.b.	30.50
Neville, Is., Pa.	29.25

LAKE SUPERIOR ORES

51.50% Fe natural content, delivered
lower Lake ports. Prices for 1957 season.
Freight changes for seller's account.

Openhearth lump	\$12.70
Old range, bessemer	11.85
Old range, nonbessemer	11.70
Mesabi, bessemer	11.60
Mesabi, nonbessemer	11.45
High phosphorus	11.45

ELECTRICAL SHEETS

22-Gage F.o.b. Mill Cents Per Lb	Hot-Rolled (Cut Lengths)*	Cold-Reduced (Coiled or Cut Length)	
		Semi-Processed	Fully Processed
Field		9.625	
Armature	11.10	10.85	11.35
Elect.	11.80	11.55	12.05
Special Motor		12.10	
Motor	12.90	12.65	13.15
Dynamo	13.95	13.70	14.20
Trans. 72	15.00	14.75	15.25
Trans. 65	15.55		
Grain Oriented			
Trans. 58	16.05	Trans. 66	20.20
Trans. 52	17.10	Trans. 80	19.20
		Trans. 73	19.70

Producing points: Beech Bottom (W5); Brackenridge (A3); Granite City (G2); Indiana Harbor (I3); Mansfield (E2); Newport, Ky. (N5); Niles, O. (N3); Vandergrift (U1); Warren, O. (R3); Zanesville, Butler (A7).

ELECTRODES

Cents per lb f.o.b. plant, threaded, with
nipples, unboxed.

GRAPHITE			CARBON*		
Diam. (In.)	Length (In.)	Price	Diam. (In.)	Length (In.)	Price
24	84	26.00	40	100, 110	10.70
20	72	25.25	35	110	10.70
18	72	25.75	30	110	10.85
14	72	25.75	24	72 to 84	11.25
12	72	26.25	20	90	11.00
10	60	28.00	17	72	11.40
10	48	28.50	14	72	11.85
7	60	28.25	12	60	12.95
6	60	31.50	10	60	13.00
3	40	35.00	8	60	13.30
2 1/2	40	37.00			
2 1/2	30	39.25			
2 1/2	24	60.75			

* Prices shown cover carbon nipples.

REFRACTORIES

Fire Clay Brick

Carloads per 1000
First quality, Ill., Ky., Md., Mo., Ohio, Pa.
(except Salina, Pa., add \$5.00) \$135.00
No. 1 Ohio 120.00
Sec. Quality, Pa., Md., Ky., Mo., Ill. 120.00
No. 2 Ohio 103.00
Ground fire clay, net ton, bulk
(except Salina, Pa., add \$2.00) 21.50

Silica Brick

Mt. Union, Pa., Ensley, Ala. \$150.00
Childs, Hays, Pa. 155.00
Chicago District 160.00
Western Utah 175.00
California 180.00
Super Duty
Hays, Pa., Athens, Tex., Wind-
ham, Warren, O., Morrisville
157.00-160.00

Silica cement, net ton, bulk, Latrobe 28.50
Silica cement, net ton, bulk, Chi-
cago 25.50
Silica cement, net ton, bulk, Ens-
ley, Ala. 26.50
Silica cement, net ton, bulk, Mt.
Union 24.50
Silica cement, net ton, bulk, Utah
and Calif. 37.00

Chrome Brick

Per net ton
Standard chemically bonded, Balt. \$105.00
Standard chemically bonded, Curt-
lner, Calif. 115.00
Burned, Balt. 99.00

Magnesite Brick

Standard Baltimore \$131.00
Chemically bonded, Baltimore 116.00

Grain Magnesite

St. % to 1/2-in. grains
Domestic, f.o.b. Baltimore in bulk, \$73.00
Domestic, f.o.b. Chewelah, Wash.,
Luning, Nev. 46.00
in sacks \$52.00-54.00

Dead Burned Dolomite

Per net ton
F.o.b. bulk, producing points in:
Pa., W. Va., Ohio \$16.75
Midwest 17.00
Missouri Valley 15.00

(Effective Dec. 26, 1957)

MERCHANT WIRE PRODUCTS

F.o.b. Mill	Standard Q Coated Nails		Woven Wire Fence		"T" Fence Posts		Single Loop Bale Ties		Galv. Barbed and Twisted Barbed Wire		Merch. Wire Ann'd		Merch. Wire Galv.	
	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col
Alabama City R3	173	187			212	193			8.65	9.20				
Aliquippa J1***	173	190					190		8.65	9.325				
Atlanta A8**	175	192			214	198			8.75	9.425				
Bartonsville K2**	175	192			178	214	198		8.65	9.95*				
Buffalo W6									8.65	9.325				
Chicago N4***	173	190			172	212	196							
Cleveland A6									8.65					
Cleveland A5									8.65					
Crawf. dar. M4**	175	192			214	198			8.75	9.425				
Donora, Pa. A5	173	187			212	193			8.65	9.20				
Duluth A5	173	187			212	193			8.65	9.20				
Fairfield, Ala. T2	173	187			212	193			8.65	9.20				
Galveston D4	9.10													
Houston S2	178	192			217	198			8.90	9.45				
Jacksonville M4	184-1	197			219	203			9.00	9.675				
Johnstown B3**	173	190			172	196*			8.65	9.325**				
Joliet, Ill. A5	173	187			212	193			8.65	9.20				
Kokomo C9*	175	189			214	195*			8.75	9.40*				
L. Angeles B2***									9.60	10.275				
Kansas City S2*	178	192			217	198*			8.90	9.45*				
Minneapolis C6†	178	192			177	217	198†		8.90	9.45†				
Monessen P6									8.65	9.20				
Palmer, Mass. W6									8.95	9.50*				
Pittsburgh, Cal. C7	192	210					213		9.60	10.15				
Rankin, Pa. A5	173	187							8.65	9.20				
Chicago R3	173	187							8.65	9.20				
S. San Fran. C6†							236		9.60	10.15†				
Sparrows Pt. B3**	175						214	198	8.75	9.425				
Sterling, Ill. N4***	175	192			172	214	198		8.75	9.425				
Struthers, O. Y1*									8.65	9.30				
Worcester A5	179								8.95	9.50				
Williamsport S5									8.95	9.50				

* Zinc less than .10¢.

** 11-12¢ zinc.

*** 10¢ zinc.

† Plus zinc extras.

‡ Wholesalers only.

C-R SPRING STEEL

Cents Per Lb F.o.b. Mill	CARBON CONTENT				
	0.26	0.41	0.61	0.81	1.06
	0.40	0.60	0.80	1.05	1.35
Baltimore, Md. T8	9.50	10.70	12.90	15.90	18.85
Bristol, Conn. W12		10.70	12.90	16.10	19.30
Beaton T8	9.50	10.70	12.90	15.90	18.85
Buffalo, N. Y. R7	8.95	10.40	12.60	15.60	18.55
Carnegie, Pa. S9	8.95	10.40	12.60	15.60	18.55
Cleveland A5	8.95	10.40	12.60	15.60	18.55
Dearborn S1	9.05	10.50	12.70		
Detroit D1	9.05	10.50	12.70	15.70	
Detroit D2	9.05	10.50	12.70		
Dover, O. G4	8.95	10.40	12.60	15.60	18.55
Evanston, Ill. M8	9.05	10.40	12.60		
Franklin Park, Ill. T8	9.05	10.50	12.45	15.45	18.40
Harrison, N. J. C1†	10.10	10.55	12.90	16.10	19.30
Indianapolis J3	10.10	10.55	12.60	15.60	18.55
Los Angeles C1	11.15	12.60	14.80	17.80	
New Castle, Pa. B4	8.95	10.40	12.60	15.60	
New Haven, Conn. D1	9.40	10.70	12.90	15.90	
Pawtucket, R. I. N7	9.50	10.70	12.90	15.90	18.85
Pittsburgh S7	8.95	10.40	12.60	15.60	18.55
Riverdale, Ill. A1	8.95	10.40	12.60	15.60	18.55
Sharon, Pa. S1	8.95	10.40	12.60	15.60	18.55
Trenton, N.J.	10.70	12.90	16.10	19.30	
Wallingford W1	9.40	10.70	12.90	15.90	18.55
Warren, Ohio T4	8.95	10.40	12.60	15.60	18.75
Worcester, Mass. A5	9.50	10.70	12.90	15.90	18.85
Youngstown J3	8.95	10.40	12.60	15.60	18.55

BOLTS, NUTS, RIVETS, SCREWS

(Base discount, f.o.b. mill)

Pct. Discounts

Machine and Carriage Bolts	Full Container Price	30 Containers	20,000 Lb.	40,000 Lb.
1/2" and smaller x 6" and shorter	49	54	56	57
5/8" thru 1" x longer than 6"	35	40	43	45
Rolled thread carriage bolts 1/2" & smaller x 6" and shorter	49	54	56	57
Lg. all diam. x 6" & shorter	49	54	56	57
Lg. all diam. longer than 6 in.	39	44 1/2	47	48 1/2
Flow bolts, 1/2" and smaller x 6" and shorter	49	54	56	57

(Add 25 pct for broken case quantities)

Nuts, Hex, HP reg. & hvy.	Full case or Keg price
3/4 in. or smaller	60 1/2
7/8 in. to 1 in. inclusive	55 1/2
1 1/8 in. to 1 1/2 in. inclusive	58 1/2
1 3/8 in. and larger	53 1/2

C. P. Hex, reg. & hvy.

3/4 in. and smaller	60 1/2
7/8 in. to 1 1/2 in. inclusive	55 1/2
1 1/8 in. and larger	53 1/2

Hot Galv. Hex Nuts (All Types)

3/4 in. and smaller	46 1/2
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Semi-finished Hex Nuts

3/4 in. or smaller	60 1/2
7/8 in. to 1 1/2 in. inclusive	55 1/2
1 1/8 in. and larger	53 1/2

(Add 25 pct for broken case or keg quantities)

Finished

3/8 in. and smaller	63
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Rivets

	Base per 100 lb
1/2 in. and larger	\$12.25
7/16 in. and smaller	19

Cap Screws

Discount (Packages)

Full Finished H. C. Heat Treat

New std. hex head, pack-

aged

3/8" diam. and smaller x

6" and shorter

3/4", 7/8", and 1" diam. x

6" and shorter

3/8" diam. and smaller x

longer than 6"

3/4", 7/8", and 1" diam. x

longer than 6"

1/4" through 5/8" dia. x 6"

and shorter

3/4" through 1" dia. x 6"

and shorter

Minimum quantity—1/4" through 3/8"

diam., 15,000 pieces; 1/16" through 5/8"

diam., 5,000 pieces; 3/4" through 1" diam.,

2,000 pieces.

Machine Screws & Stove Bolts

Discount

Mach. Screws Bolts

Cartons Bulk

Quantity

To 1/4" diam. incl.

25,000-200,000

9

54

5/16 to 1/2" diam. incl.

25,000-200,000

9

54

All diam. over 3" long

5,000-100,000

—

54

Machine Screws & Stove Bolt Nuts

Discount

Hex Square

In Cartons

Quantity

3/8" diam. & smaller

15,000-100,000

7

9

CAST IRON PIPE INDEX

Birmingham	125.8
New York	138.7
Chicago	140.9
San Francisco-L. A.	148.6

Dec. 1955, value, Class B or heavier

5 in. or larger, bell and spigot pipe. Ex-

planation: p. 57, Sept. 1, 1955, issue.

Source: U. S. Pipe and Foundry Co.

ELECTROPLATING SUPPLIES

Anodes

(Cents per lb. frt allowed in quantity)

Copper

5000 lb lots

Rolled elliptical, 18 in. or longer,

Electrodeposited

Brass, 80-20, ball anodes, 2000 lb

or more

Zinc, ball anodes, 2000 lb lots

(for elliptical add 1c per lb)

Nickel, 99 pct plus, rolled carbon,

5000 lb

(Rolled depolarized add 3c per lb)

Cadmium

Tin, ball anodes and elliptical \$1.13 per lb.

Chemicals

(Cents per lb. f.o.b. shipping point)

Copper cyanide, 100 lb drum

Copper sulphate, 100 lb bags, per

cwt.

Nickel salts, single, 100 lb bags

Nickel chloride, freight allowed,

300 lb

Sodium cyanide, domestic, f.o.b.

N. Y., 200 lb drums

(Philadelphia price 23.10)

Zinc cyanide, 100 lb

Potassium cyanide, 100 lb drum

N. Y.

Chromic acid, flake type, 10,000 lb

or more

METAL POWDERS

Per pound, f.o.b. shipping point, in ton

lots for minus 100 mesh

Swedish sponge iron, del. East of

Miss. River, ocean bags, 23,000

lb. and over

F.O.B. Riverton or Camden, New

Jersey, freight allowed west of

Miss. River

Domestic sponge iron, 98+ % Fe,

23,000 lb. and over del'd East

of Miss. River

F.O.B. Riverton, New Jersey, West

of Miss. River

Canadian sponge iron, del'd in

East, carloads

Electrolytic iron, annealed,

Imported 99.5+ % Fe

domestic 99.5+ % Fe

Electrolytic iron, unannealed

minus 325 mesh, 99+ % Fe

Electrolytic iron melting

stock, 99.84% pure

Carbonyl iron size 3 to 20

micron, 98%, 99.8+ % Fe.

Aluminum, freight allowed

Brass, 10 ton lots

Copper, electrolytic

Copper, reduced

Cadmium, 100-199 lb. 95c plus metal value

Chromium, electrolytic, 99.85%

min. Fe. 03 max. Del'd

Lead

Manganese f.o.b. Extron, Pa.

Molybdenum, 99%

Nickel, chemically precipitated

Nickel, unannealed

Nickel, annealed

Nickel, spherical, unannealed

#80

Silicon

Solder powder

Stainless steel, 302

Stainless steel, 316

Tin

Tungsten, 99% (65 mesh) \$3.75 (nominal)

Zinc, 5000 lb & over.

Metropolitan Price, dollars per 100 lb.

WARE-HOUSES

Cities	City Deliver Charge	Sheets			Strip	Plates	Bars			Alloy Bars					
		Hot-Rolled (16 ga. & hvy.)	Cold-Rolled (15 gage)	Galvanized (10 gage)†			Hot-Rolled	Standard Structural	Hot-Rolled (merchant)	Cold- Finished	Hot-Rolled 4615 As rolled	Hot-Rolled 4615 Annealed	Cold-Drawn 4615 As rolled	Cold-Drawn 4148 Annealed	
Atlanta		8.59	9.87	10.13	8.64	8.97	9.05	9.01	10.68						
Baltimore	\$.10	8.38	8.98	9.71	8.86	8.76	9.29	9.16	11.44*	16.18	15.18	19.73	18.98		
Birmingham	.15	8.18	9.45	10.15	8.23	8.56	8.64	8.60	10.57						
Boston	.10	9.48	10.54	11.55	9.52	9.82	9.73	9.83	13.00	15.79	15.38	19.89	19.18		
Buffalo	.15	8.40	9.15	11.22	8.65	9.05	9.05	8.95	11.05*	16.34	15.15	19.01	18.95		
Chicago	.15	8.35	9.60	10.15	8.38	8.71	8.79	8.75	8.95	15.80	14.80	19.35	18.60		
Cincinnati	.15	8.49	9.65	10.20	8.69	9.08	9.33	9.07	9.46	15.61	15.11	18.96	18.91		
Cleveland	.15	8.33	9.60	10.10	8.48	8.94	9.16	8.84	10.95*	15.89	14.89	19.44	18.96		
Denver	.20	9.70	11.30	12.49	9.00	9.70	9.00	9.98	10.65				17.60		
Detroit	.15	8.58	9.85	10.50	8.73	9.06	9.33	9.05	9.30	15.46	15.06	18.81	18.86		
Houston		8.45	9.75		8.60	9.05	8.60	8.55	11.10	16.20		19.30	19.05		
Kansas City	.20	9.02	10.27	10.07	9.05	9.38	9.46	9.42	9.87	20.02	15.47	20.02	19.27		
Los Angeles	.10	7.85**	10.85	11.75	7.90	7.90	7.95	7.90	13.35*	17.05	16.10	21.05	20.35		
Memphis	.15	8.55	9.80		8.60	8.93	9.01	8.97	12.11*						
Milwaukee	.15	8.48	9.73	10.28	8.51	8.84	9.00	8.88	9.18	15.43	14.93	18.78	18.73		
New York	.10	8.97	10.23	10.66	9.41	9.53	9.45	9.67	12.86*	15.02	15.19	18.42	18.99		
Norfolk	.20	8.00			8.40	8.35	8.70	8.45	10.70						
Philadelphia	.10	8.10	9.00	9.97	8.79	8.87	8.60	8.75	11.61*	15.61	15.11	18.96	18.91		
Pittsburgh	.15	8.33	9.60	10.50	8.48	8.71	8.79	8.75	10.95*	15.80	14.80	19.35	18.60		
Portland		8.50	11.20	11.55	9.05	9.30†	8.65	8.65	14.50	18.50	16.10	20.75	20.25		
San Francisco	.10	9.45	10.85	11.10	9.55	9.70	9.60	9.80	13.10	17.05	16.10	21.05	20.35		
Seattle		9.95	11.15	12.00	10.00	9.70	9.80	10.80	14.05	16.55	16.35	20.65	20.15		
Spokane	.15	10.10	11.30	12.15	10.15	9.85	9.95	10.25	14.20		17.35	21.55	21.05		
St. Louis	.15	8.69	9.94	10.51	8.74	9.08	9.25	9.12	9.56	15.66	15.16	19.01	18.96		
St. Paul	.15	8.94	10.19	10.76	8.99	9.45	9.53	9.37	9.81		15.26		19.06		

Base Quantities (Standard unless otherwise keyed): Cold finished bars: 2000 lb or over. Alloy bars: 1000 to 1999 lb. All others: 2000 to 4999 lb. All HR products may be combined for quantity. All galvanized sheets may be combined for quantity. CR sheets may be combined with each other for quantity. * All sizes except 18 and 16 gage. † 10c zinc. ‡ Deduct for country delivery. § 3/16 in. to 1/2 in. • C1018—1 in. rounds.

(Effective Dec. 26, 1957)

PIG IRON

Dollars per gross ton, f.o.b., subject to switching charges.

Producing Point	Basic	Fdry.	Mall.	Bess.	Low Phos.
Birdsboro, Pa. B6	68.00	68.50	69.00	69.50	
Birmingham R3	62.00	62.50*			
Birmingham W9	62.00	62.50*	66.50		
Birmingham U4	62.00	62.50*	66.50		
Buffalo R3	66.00	66.50	67.00	67.50	
Buffalo H1	66.00	66.50	67.00	67.50	
Buffalo W6	66.00	66.50	67.00	67.50	
Chester P2	66.50	67.00	67.50		
Chicago J4	66.00	66.50	66.50	67.00	
Cleveland A5	66.00	66.50	66.50	67.00	71.00†
Cleveland R3	66.00	66.50	66.50	67.00	
Duluth J4	66.00	66.50	66.50	67.00	71.00†
Erie J4	66.00	66.50	66.50	67.00	71.00†
Everett M6	67.50	68.00	68.50		
Fontana K1	75.00	75.50			
Geneva, Utah C7	66.00	66.50			
Granite City C2	67.90	68.40	68.90		
Hubbard Y1			66.50		
Ironton, Utah C7	66.00	66.50			
Midland C11	66.00				
Minneapolis C6	66.00	68.50	69.00		
Monaca P6	66.00				
Neville Is. P4	66.00	66.50	66.50	67.00	71.00†
N. Tonawanda T1	66.00	66.50	67.00	67.50	
Sharpsville S3	66.00	66.50	66.50	67.00	
So. Chicago R3	66.00	66.50	66.50		
So. Chicago W8	66.00	66.50	66.50	67.00	
Svealand A2	68.00	68.50	69.00	69.50	
Toledo J4	66.00	66.50	66.50	67.00	
Troy, N. Y. R3	68.00	68.50	69.00	69.50	
Youngstown Y1			66.50	67.00	74.00

DIFFERENTIALS: Add, 75¢ per ton for each 0.25 pct silicon or portion thereof over base (1.75 to 2.25 pct except low phos., 1.75 to 2.00 pct) 50¢ per ton for each 0.25 pct manganese or portion thereof over 1 pct, 32¢ per ton for 0.50 to 0.75 pct nickel, 51¢ for each additional 0.25 pct nickel. Add \$1.00 for 0.31-0.69 pct phos.

Silvery Iron: Buffalo (6 pct), H1, \$79.25; Jackson J1, J4 (Globe Div.), \$78.00; Niagara Falls (15.01-15.50), \$101.00; Keokuk (14.01-14.50), \$103.50; (15.51-16.00), \$106.50. Add \$1.00 per ton for each 0.50 pct silicon over base (6.01 to 6.50 pct) up to 18 pct. Add \$1.25 for each 0.50 pct manganese over 1.00 pct. Bessemer silvery pig iron (under .10 pct phos.): \$64.00. Add \$1.00 premium for all grades silvery to 18 pct.

† Intermediate low phos.

STAINLESS STEEL

Base price cents per lb f.o.b. mill

Product	201	202	301	302	303	304	316	321	347	403	410	416	430
Ingot, re-rolled	22.00	23.75	23.25	25.25	—	27.00	39.75	32.25	37.00	—	16.75	—	17.00
Slabs, billets	27.00	27.00	28.00	31.50	32.00	33.25	49.50	40.00	46.50	—	21.50	—	21.75
Billets, forging	—	36.50	37.25	38.00	41.00	40.50	62.25	47.00	55.75	32.00	28.25	28.75	28.75
Bars, struct.	42.00	43.00	44.25	45.00	48.00	47.75	73.00	55.50	64.75	37.75	33.75	34.25	34.25
Plates	44.25	45.00	46.25	47.25	50.00	50.75	76.75	59.75	69.75	40.25	35.00	36.75	36.00
Sheets	48.50	49.25	51.25	52.00	—	55.50	81.50	65.50	79.25	48.25	40.25	—	40.75
Strip, hot-rolled	36.00	39.00	37.25	40.50	—	44.25	69.25	53.50	63.50	—	31.00	—	32.00
Strip, cold-rolled	45.00	49.25	47.50	52.00	—	55.50	81.50	65.50	79.25	48.25	40.25	—	40.75
Wire CF; Rod HR	40.00	40.75	42.00	42.75	45.50	45.25	69.25	52.50	61.50	35.75	32.00	32.50	32.50

STAINLESS STEEL PRODUCING POINTS:

Sheets: Midland, Pa., C11; Brackenridge, Pa., A3; Butler, Pa., A7; Vandergrift, Pa., U1; Washington, Pa., W2, J2; Baltimore, Et; Middletown, O., A7; Massillon, O., R3; Gary, U1; Bridgeville, Pa., U2; New Castle, Ind., J2.

Strip: Midland, Pa., C11; Waukegan, Cleveland, A5; Carnegie, Pa., S9; McKeesport, Pa., F1; Reading, Pa., C2; Washington, Pa., W2; W. Lechburg, Pa., A3; Bridgeville, Pa., U2; Detroit, M2; Canton-Massillon, O., R3; Harrison, N. J., D3; Youngstown, J3; Sharon, Pa., S1; Butler, Pa., A7; Wallingford, Conn., U1 (plus further conversion extras); W1; New Bedford, Mass. (.25¢ per lb higher), R6; Gary, U1 (.25¢ per lb higher).

Bar: Baltimore, A7; S. Duquesne, Pa., U1; Munhall, Pa., U1; Reading, Pa., C2; Titusville, Pa., U2; Washington, Pa., J2; McKeesport, Pa., U1, F1; Bridgeville, Pa., U2; Dunkirk, N. Y., A3; Massillon, O., R3; S. Chicago, U1; Syracuse, N. Y., C11; Watervliet, N. Y., A3; Waukegan, A3; Canton, O., T5, R3; Ft. Wayne, J4; Detroit, R5; Gary, U1.

Wire: Waukegan, A5; Massillon, O., R3; McKeesport, Pa., F1; Ft. Wayne, J4; Harrison, N. J., D3; Baltimore, A7; Dunkirk, A3; Monaca, P1; Syracuse, C11; Bridgeville, U2.

Structurals: Baltimore, A7; Massillon, O., R3; Chicago, Ill., J4; Watervliet, N. Y., A3; Syracuse, C11; S. Chicago, U1.

Plates: Brackenridge, Pa., A3; Chicago, U1; Munhall, Pa., U1; Midland, Pa., C11; New Castle, Ind., J2; Middletown, A7; Washington, Pa., J2; Cleveland, Massillon, R3; Coatesville, Pa., C15; Vandergrift, Pa., U1; Gary, U1.

Forging billets: Midland, Pa., C11; Baltimore, A7; Washington, Pa., J2; McKeesport, F1; Massillon, Canton, O., R5; Watervliet, A3; Pittsburgh, Chicago, U1; Syracuse, C11; Detroit, R5; Munhall, Pa., S. Chicago, U1.

(Effective Dec. 26, 1957)

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SPRAY DECORATING
with **Conforming Matrix**

ELECTRO-FORMED NICKEL OR COPPER MASKS of all types for shielding and spraying highly intricate areas in single or multiple colors.

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FERROALLOY PRICES

Ferrochrome

Cents per lb contained Cr, lump, bulk, carloads, del'd. 67-71% Cr, .30-1.00% max. Si

0.02% C.....	41.00	0.50% C.....	38.00
0.05% C.....	39.90	1.00% C.....	37.75
0.10% C.....	38.50	1.50% C.....	37.50
0.20% C.....	38.25	2.00% C.....	37.25
4.00-4.50% C, 60-70% Cr, 1-2% Si.....	28.75		
3.50-5.00% C, 57-64% Cr, 2.00-4.50% Si.....	27.50		
0.025% C (Simplex).....	36.75		
8.00% max C, 50-55% Cr, 3-6% max Si.....	25.00		
8.50% max C, 50-55% Cr, 3% max Si.....	25.00		

High Nitrogen Ferrochrome

Low-carbon type 0.75% N. Add 5¢ per lb to regular low carbon ferrochrome max. 0.10% C price schedule. Add 5¢ for each additional 0.25% of N.

Chromium Metal

Per lb chromium, contained, packed, delivered, ton lots, 97% min. Cr, 1% max. Fe.

0.10% max. C.....	\$1.31
0.50% max. C.....	1.31
9 to 11% C, 88-91% Cr, 0.75% Fe.....	1.40

Electrolytic Chromium Metal

Per lb of metal 2" x D plate (1/8" thick) delivered packed, 99.80% min. Cr. (Metallic Base) Fe 0.20 max.

Carloads.....	\$1.29
Ton lots.....	1.31
Less ton lots.....	1.33

Low Carbon Ferrochrome Silicon

(Cr 34-41%, Si 42-45%, C 0.05% max.) Carloads, delivered, lump, 3-in. x down, packed.

Price is sum of contained Cr and contained Si.

	Cr	Si
Carloads.....	27.50	14.20
Ton lots.....	32.75	15.65
Less ton lots.....	34.35	17.30

Calcium-Silicon

Per lb of alloy, lump, delivered, packed. 30-33% Cr, 60-65% Si, 3.00 max. Fe.

Carloads.....	25.65
Ton lots.....	27.95
Less ton lots.....	29.45

Calcium-Manganese-Silicon

Cents per lb of alloy, lump, delivered, packed.

16-20% Ca, 14-18% Mn, 53-59% Si.....	24.25
Ton lots.....	26.15
Less ton lots.....	27.15

5M2

Cents per pound of alloy, delivered, 60-65% Si, 5-7% Mn, 5-7% Zr, 20% Fe 1/2 in. x 12 mesh.

Ton lots.....	21.15
Less ton lots.....	22.40

V Foundry Alloy

Cents per pound of alloy, f.o.b. Suspension Bridge, N. Y., freight allowed, max. St. Louis, V-5; 38-42% Cr, 17-19% Si, 8-11% Mn, packed.

Carload lots.....	17.20
Ton lots.....	18.70
Less ton lots.....	19.95

Graphidox No. 4

Cents per pound of alloy, f.o.b. Suspension Bridge, N. Y., freight allowed, max. St. Louis, Si 48 to 52%, Ti 9 to 11%, Ca 5 to 7%.

Carload packed.....	18.50
Ton lots to carload packed.....	19.65
Less ton lots.....	20.90

Ferromanganese

Maximum base price, f.o.b., lump size, base content 74 to 76 pct Mn.

Producing Point	Cents per-lb
Marietta, Ashtabula, O.; Alloy, W. Va.; Sheffield, Ala.; Portland, Ore.....	12.25
Johnstown, Pa.....	12.25
Sheridan, Pa.....	12.25
Philo, Ohio.....	12.25
S. Duquesne.....	12.25
Add or subtract 0.1¢ for each 1 pct Mn above or below base content.	
Briquets, delivered, 66 pct Mn:	
Carloads, bulk.....	14.80
Ton lots packed.....	17.20

Spiegeleisen

Per gross ton, lump, f.o.b. Palmerton, Pa.

Manganese	Silicon	
16 to 19%.....	3% max.....	\$100.50
19 to 21%.....	3% max.....	102.50
21 to 23%.....	3% max.....	105.00

Manganese Metal

2 in. x down, cents per pound of metal delivered.

95.50% min. Mn, 0.2% max. C, 1% max. Si, 2.5% max. Fe.....	45.75
Carload, packed.....	47.25
Ton lots.....	

Electrolytic Manganese

F.o.b. Knoxville, Tenn., freight allowed east of Mississippi, f.o.b. Marietta, O., delivered, cents per pound.

Carloads.....	34.00
Ton lots.....	36.00
250 to 1999 lb.....	38.00
Premium for Hydrogen-removed metal.....	0.75

Medium Carbon Ferromanganese

Mn 80 to 85%, C 1.25 to 1.50, Si 1.50% max., carloads, lump, bulk, delivered, per lb of contained Mn

85-90%.....	25.50
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Low-Carb Ferromanganese

Cents per pound Mn contained, lump size, del'd Mn 85-90%.

	Carloads	Ton	Less
0.07% max. C, 0.06% P, 90% Mn.....	37.15	39.95	41.15
0.07% max. C.....	35.10	37.90	39.10
0.10% max. C.....	34.35	37.15	38.35
0.15% max. C.....	33.60	36.40	37.60
0.30% max. C.....	32.10	34.90	36.10
0.50% max. C.....	31.60	34.40	35.60
0.75% max. C, 80-85% Mn, 5.0-7.0% Si.....	28.60	31.40	32.60

Silicomanganese

Lump size, cents per pound of metal, 65-68% Mn, 18-20% Si, 1.5% max. C for 2% max. C, deduct 0.2¢ f.o.b. shipping point.

Carloads bulk.....	12.80
Ton lots, packed.....	14.45
Briquet contract basis carloads, bulk, delivered, per lb of briquet.....	15.10
Ton lots, packed, pallets.....	16.50

Silvery Iron (electric furnace)

Si 15.50 to 16.00 pct., f.o.b. Keokuk, Iowa, or Watahatchee, Wash., \$106.50 gross ton, freight allowed to normal trade area. Si 15.01 to 15.50 pct, f.o.b. Niagara Falls, N. Y., \$93.00.

Silicon Metal

Cents per pound contained Si, lump size, delivered, packed.

	Ton lots, packed	Carloads, packed
96.75% Si, 1.25% Fe.....	24.20	22.90
98% Si, 0.75% Fe.....	24.95	23.65

Silicon Briquets

Cents per pound of briquets, bulk, delivered, 40% Si, 2 lb Si, briquets.

Carloads, bulk.....	7.70
Ton lots, packed.....	10.50

Electric Ferrosilicon

Cents per lb contained Si, lump, bulk, carloads, f.o.b. shipping point.

50% Si.....	13.00	75% Si.....	16.40
65% Si.....	15.25	85% Si.....	18.10
90% Si.....	19.50		

Ferrovanadium

50-55% V delivered, per pound, contained V, carloads, packed.

Openhearth.....	3.20
Crucible.....	3.30
High speed steel (Primos).....	3.40

Calcium Metal

Eastern zone, cents per pound of metal, delivered.

	Cast	Turnings	Distilled
Ton lots.....	\$2.05	\$2.95	\$3.75
Less ton lots.....	2.40	3.30	4.55

Alifer, 20% Al, 40% Si, 40% Fe, f.o.b. Suspension Bridge, N. Y., per lb.

Carloads.....	10.65¢
Ton lots.....	11.80¢

Calcium molybdate, 43.6-46.6% f.o.b. Langeloth, Pa., per pound contained Mo.....

	\$1.28
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Ferrocolumbium, 50-50%, 2 in. x D, delivered per pound contained Cb.

Ton lots.....	\$4.90
Less ton lots.....	4.95

Ferro-tantalum-columbium, 20% Ta, 40% Cb, 0.30% C, del'd ton lots, 2-in. x D per lb con't Sb plus Ta.....

	\$4.25
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Ferromolybdenum, 55-75%, 200-lb containers, f.o.b. Langeloth, Pa., per pound contained Mo.....

	\$1.68
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Ferrophosphorus, electric, 23-26%, car lots, f.o.b. Siglo, Mt. Pleasant, Tenn., \$4.00 unitage, per gross ton.....

	\$90.00
10 tons to less carload.....	\$110.00

Ferrotitanium, 40% regular grade 0.10% C max., f.o.b. Niagara Falls, N. Y., and Bridgeville, Pa., freight allowed, ton lots, per lb contained Ti.....

	\$1.35
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Ferrotitanium, 25% low carbon, 0.10% C max., f.o.b. Niagara Falls, N. Y., and Bridgeville, Pa., freight allowed, ton lots, per lb contained Ti.....

	\$1.50
Less ton lots.....	\$1.54

Ferrotitanium, 15 to 18% high carbon, f.o.b. Niagara Falls, N. Y., freight allowed, carload per net ton.....

	\$240.00
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Ferrotungsten, 1/4 x down packed, per pounds contained W, ton lots delivered.....

	\$2.60 (nominal)
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Molybdenic oxide, briquets per lb contained Mo, f.o.b. Langeloth, Pa.....

	\$1.41
bags, f.o.b. Washington, Pa., Langeloth, Pa.....	\$1.38

Simnall, 20% Si, 20% Mn, 20% Al, f.o.b. Philo, Ohio, freight allowed per lb.

Carload, bulk lump.....	18.50¢
Ton lots, packed lump.....	20.50¢
Less ton lots.....	21.00¢

Vanadium oxide, 86-89% V₂O₅ per pound contained V₂O₅.....

	\$1.38
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Zirconium, per lb of alloy 35-40% f.o.b. freight allowed, carloads, packed.....

	27.25¢
12-15%, del'd lump, bulk-carloads.....	9.25¢

Boron Agents

Borasil, per lb of alloy del. f.o.b. Philo, Ohio, freight allowed, B 3-4%, Si 40-45%, per lb contained B

2000 lb carload.....	\$5.50
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Bortram, f.o.b. Niagara Falls. Ton lots per pound.....

	45¢
Less ton lots, per pound.....	50¢

Corbortam, Ti 15-21%, B 1-2%, Si 2-4%, Al 1-2%, C 4-5-7.5%, f.o.b. Suspension Bridge, N. Y., freight allowed.

Ton lots per pound.....	14.00¢
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Ferroboreon, 17.50 min. B, 1.50% max. Si, 0.50% max. Al, 0.50% max. C, 1 in. x D, ton lots, f.o.b. Wash., Pa., Niagara Falls, N. Y., delivered 100 lb up

10 to 14% B.....	.85
14 to 19%.....	1.20
19% min. B.....	1.50

Grainal, f.o.b. Bridgeville, Pa., freight allowed, 100 lb and over

No. 1.....	\$1.05
No. 79.....	50¢

Manganese-Boron, 75.00% Mn, 15.20% B, 5% max. Fe, 1.50% max. Si, 3.00% max. C, 2 in. x D, del'd.

Ton lots.....	\$1.46
Less ton lots.....	1.57

Nickel-Boron, 15-18% B, 1.00% max. Al, 1.50% max. Si, 0.50% max. C, 3.00% max. Fe, balance Ni, del'd less ton lots.....

	2.15
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(Effective Dec. 26, 1957)

Yes! ... it's **ALL STEEL**



HP RANGE:
½ to 50 hp

RATIOS:
4:1—14:1—24:1 (or 20:1)

OUTPUT SPEED RANGE:
420 to 5 rpm

TORQUE RATINGS:
up to 31,500 lb-in

FALK ALL STEEL Shaft Mounted Drive

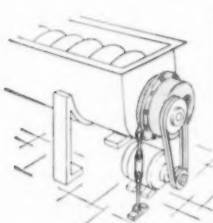
...Steel can "take it"!

STEEL frame ... of fabricated plate supports all rotating elements—provides double the ability of iron to maintain vital alignment of revolving elements, even under shock load or external impact.

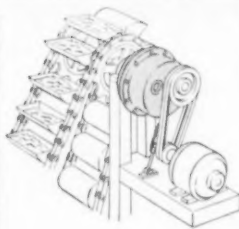
STEEL housing ... will not fracture, serves only as protective cover and lubricant reservoir. Therefore, lubricant supply is safeguarded.

STEEL tie-rod and straddle-mounted tie rod brackets... are fastened to heavy steel frame by steel bolts in double shear.

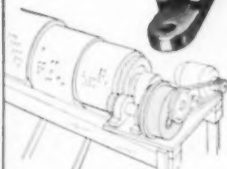
A FEW TYPICAL APPLICATIONS



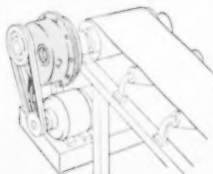
SCREW CONVEYOR



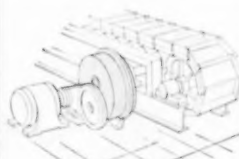
BUCKET ELEVATOR



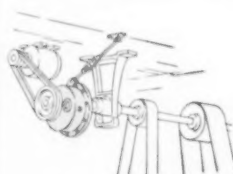
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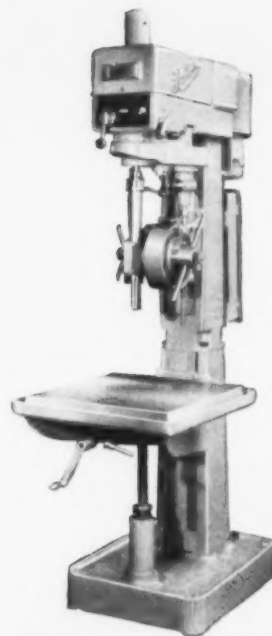
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The completeness of the "Buffalo" machine tool line enables you to select the exact units you need to fit your production and maintenance needs. Shown on this page are only three of the many items in the complete line. Also bearing the reliable "Buffalo" name are individual lines of drill presses, bending rolls, wrapping rolls, punches and mill shears. For the full story on how "Buffalo" machine tools can perform your operations better, faster, more economically, contact your nearest "Buffalo" machine tool dealer. Or, write us direct, outlining your needs.



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This versatile machine cuts, punches, notches, shears, slits, copes, miters — without changing tools. Angles, tees, channels, bars, flats — it takes them all in stride. Massive electrically welded steel plate frame insures a long life of dependable operation. Write for Bulletin 360.

"Buffalo" Machine Tools feature the famous "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.



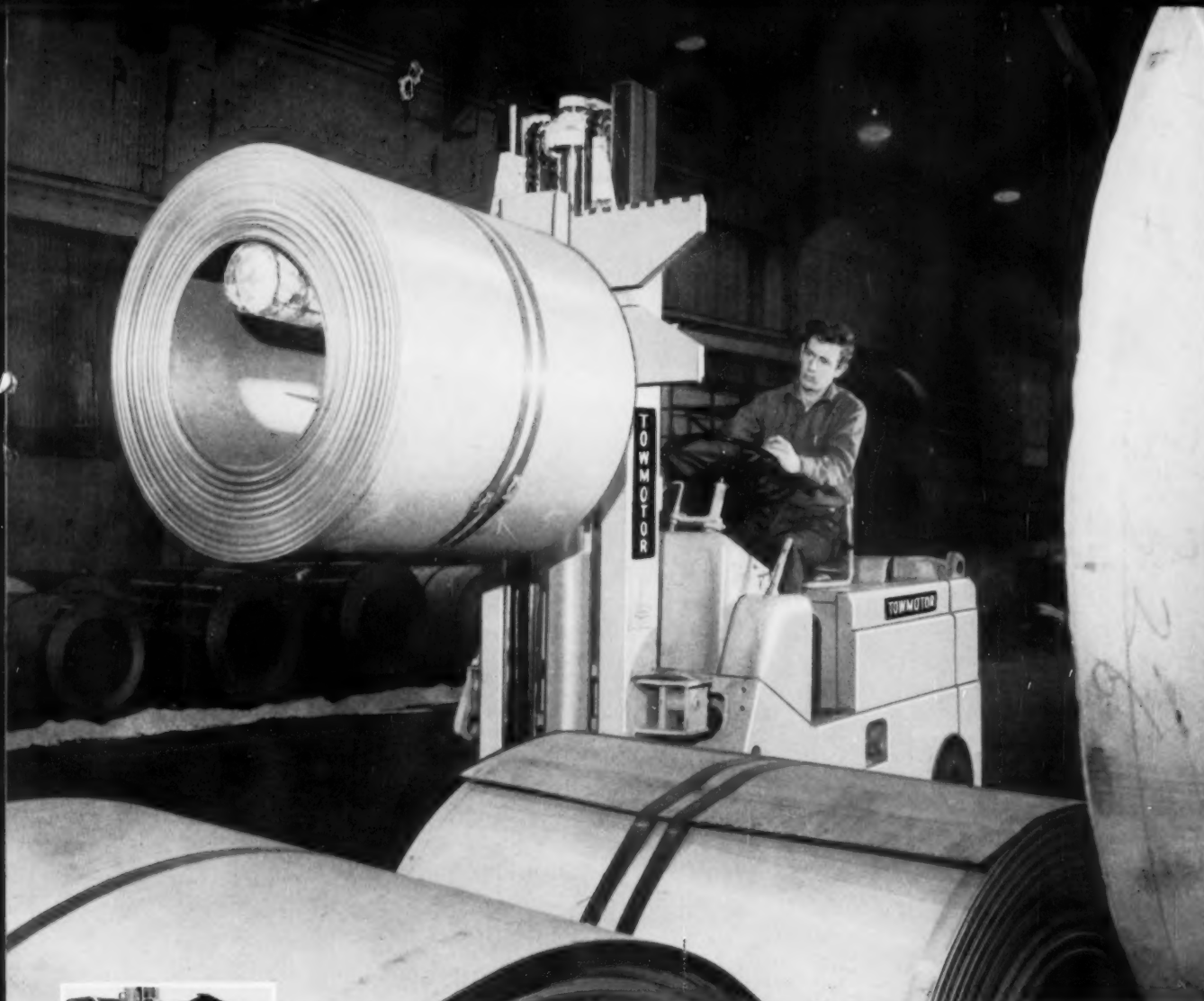
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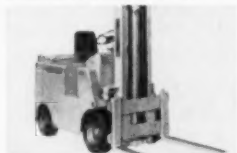


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**"Our Schiess vertical boring mill
DOES THE JOB 3 TIMES FASTER,
MORE ACCURATELY, with a BETTER FINISH!"**

Hahn Manufacturing Company, 5332 Hamilton Ave., Cleveland

Jobs of increased size and time limitations no longer hold back production at Hahn Manufacturing Company.

The company reports: "Our Schiess machine has already handled a 60" high cast iron cylinder and a 108" diameter ship propeller. We cut production time by using the two boring heads together. For instance, one head can be used for roughing while the other is finishing. Or one head can be used for turning while the other is boring.

"Our operators claim the machine is just about foolproof. They like the cross-rail electro mechanical controls. They also praise the hydraulic pre-selection of speeds, the fingertip control for direction of feed and rapid traverse, and the all-vertical gear drive. Another thing—no special training

was needed. Our regular machinists put it right to work as soon as they learned the controls.

"The Schiess mill does our big jobs just about three times faster, provides a better finish, is more accurate and results in less spoilage."

Get to know this product of Europe's largest builder of heavy machine tools. Parts and service are as close as Pittsburgh. An American Schiess engineer will be happy to help you size up this heavy producer for your heavy production needs.

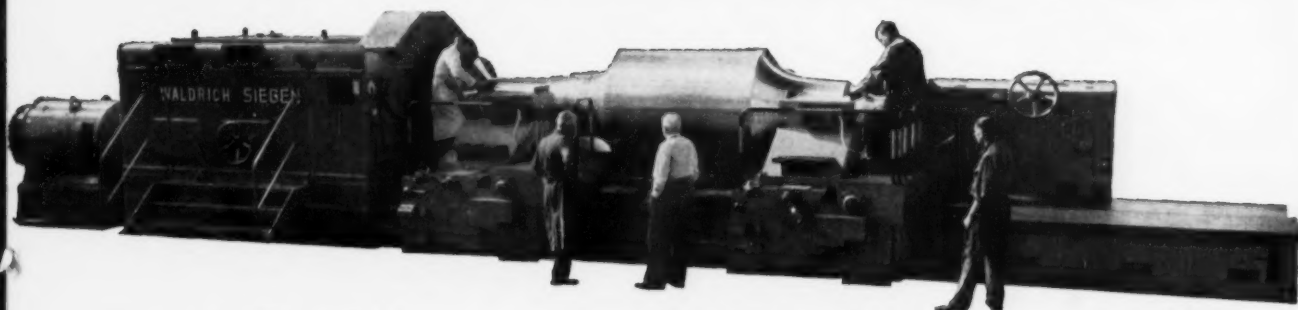
Write for catalog and complete specifications.

Standard Model KZ Double Column Vertical boring mills are available with 80", 98" and 118" turning diameters.

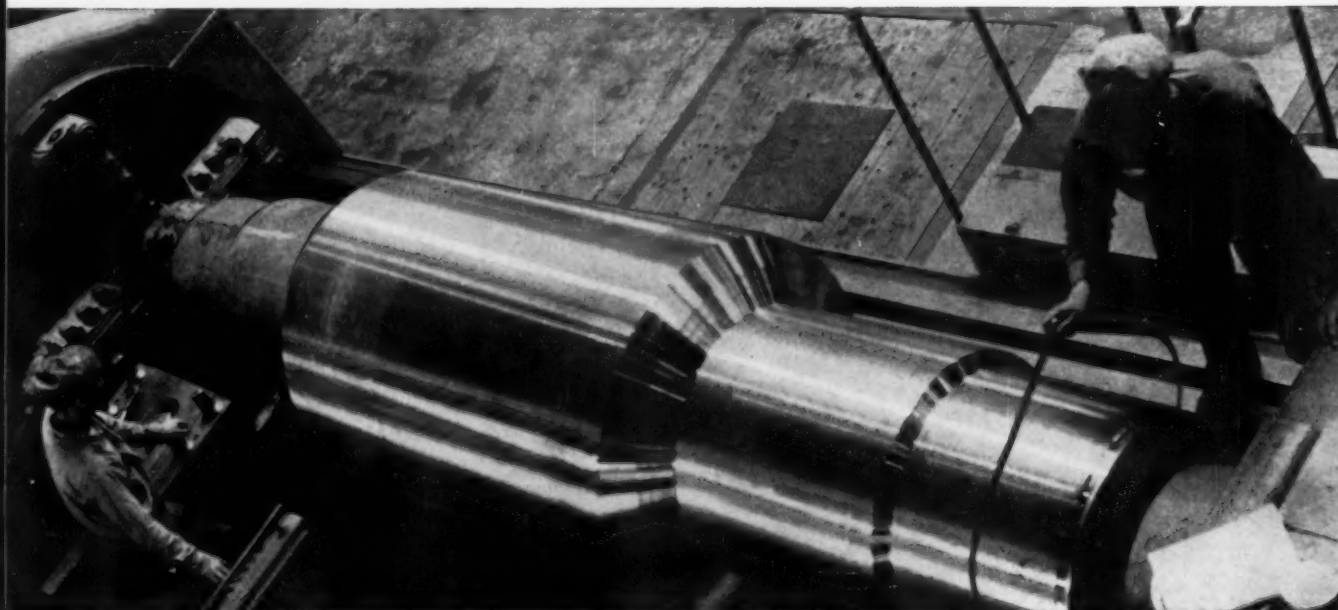
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AMERICAN SCHIESS CORPORATION • 1232 Penn Avenue, Pittsburgh 22, Pa:

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Right now, you're seeing it in action at the Ohio Steel Foundry Co., Lima, Ohio, biting into a 57-ton, 98-in. long roll, with a 53-in. O.D. In just three passes, its hungry cutters will shear 15 inches of steel off this diameter. Before it's through, 12 tons of turnings will come off.

This job used to take 68 hours at Ohio Steel Foundry. The husky Waldrich breezes through it in just 16½ hours flat.

It takes plenty of muscle to peel through so much

steel and the Waldrich has it, delivering 250 horsepower to the spindle. Speed is set at the selector wheel, feed at each of the two independent carriages.

And here's an interesting economy note: chips from the Waldrich lathe are large enough to be remelted, unlike finer chips from other lathes that oxidize too quickly. Ohio Steel Foundry collects a bonus of \$15 on every ton salvaged.

Three different size Waldrich lathes are now in operation at this plant, turning workpieces with maximum O.D.'s of 36", 48" and 63". Maybe one of these sizes is the answer to your roll turning needs. It's easy to find out. Write today for complete details on these heavy producers.



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The photograph illustrates a WILLIAMS-WHITE Hydraulic Bulldozer bending angle sections into complete circles as an initial step in the production of blade circle assemblies for use on road scrapers. The completed ring with gear inserted is shown at right in photo.

This is another example of the versatility of WILLIAMS-WHITE Hydraulic Bulldozers, available in capacities from 50 through 500 tons. For full information regarding these or other machines built to your specifications, write us or one of our representatives.



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THE CLEARING HOUSE

Market Will Favor Buyer in '58

Used machinery dealers are urging purchasers to take full advantage of the current buyer's market.

Large dealer inventories give users a wide selection and prices are in line.

■ "There will be good news for buyers of used machine tools during 1958," says Elmer W. Pfeil, President of the Machinery Dealers National Assn.

The good news is the word that users have their best opportunity in years to up-grade existing production equipment. With the used tool market softening it's clearly a buyer's market.

"Dealers have the best selection of used machine tools in their inventory they have had to offer in many years," Mr. Pfeil adds. "A decline in sales activity during 1957 provided them with the opportunity to select and purchase better tools."

Review and Revamp—He points out that the market gives manufacturers an ideal opportunity to review production facilities, sell surplus tools, purchase newer reconditioned or rebuilt machines, and strengthen their competitive position.

"When a machine tool has finished its tour of duty on a specific job," says Pfeil, "its owner can sell it to a used machine tool dealer. With the cash obtained, he's able to buy another machine or use the money for other phases of his business. If he wants additional machines he may find he can save by purchasing used machines tools which have been reconditioned or rebuilt. Immediate delivery of a

used tool is another advantage as production delays are eliminated."

Prices Are Right — Another MDNA official—R. K. Vinson, the group's executive director—also calls attention to the buyer's opportunities in '58. "Purchasers have more and better used machine tools to inspect and buy this year," he says. "Prices are in line. It's time for manufacturers to get rid of surplus inventories of existing tools and replace or upgrade them with later models."

Long-Range Optimism — Mr. Pfeil is optimistic about the long-term outlook for used machine sales in '58, although he also notes the current easy tone of the market.

"Sales of both new and used machines showed a decided downturn all through 1957," he says. "However, the overall economic picture for 1958 is good which means the tool market should firm up during the year. All indications suggest that buyers take advantage of the present market by making their purchases early this year."

Use Dealer's Knowledge—Both Mr. Pfeil and Mr. Vinson also urge buyers to put their used machine dealer's specialized knowledge to work. "Purchasers have available the services of these men who are thoroughly experienced professional equipment appraisers," says Vinson. "And the dealers add to their knowledge by visiting many plants. They have an opportunity to see the most efficient ways of producing goods at the lowest cost. Their help can be valuable to the manufacturer who wants to keep production costs in line and bring his plant up-to-date."

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- 1-21" BAR MILL, 3-high, 4 stands, with drive motors, lifting tables, roller tables, transfers, and cooling bed with runout.
- 1-16" x 22" COLD MILL, 2-high.
- 1-14" x 18" COLD MILL, 2-high.
- 1-10" x 14" COLD MILL, 2-high.
- 1-CLUSTER MILL, 4-stands, each with 2 work rolls 3 1/2" x 7" and 4 back-up rolls 5" x 6".
- 1-18" x 10" 3-HIGH COLD MILL, combination pinion stand and gear, extra forged steel rolls.
- 1-16" BAR MILL, 3-high, 4-stands, with speed reducer.
- 1-10" ROD MILL.
- 1-9" BAR MILL, 3-high.
- 1-34" dia. x 12" face VERTICAL EDGING MILL, with 750 HP reducer and motor. Maximum opening between rolls 56".

MOTORS

- 1-3500 HP MOTOR, 11000 volts, 3 phase, 60 cycle, 514 RPM.
- 1-1500 HP MOTOR, 600 volts D.C., 150/200 RPM.
- 1-1200 HP MOTOR, 2200 volts, 3 phase, 60 cycle, 853 RPM.
- 1-500 HP MOTOR, 2200 volts, 3 phase, 60 cycle, 360 RPM.

- 1-50 HP MOTOR, G.E. frame MD-610-AE, 230 volts, 500 RPM.

GEAR REDUCTION SETS

- 1-3500 HP GEAR DRIVE, 514 to 80 RPM, 6.45 to 1 ratio.
- 1-3000 HP GEAR DRIVE, ratio 500 to 73.7 RPM.
- 1-3000 HP GEAR DRIVE, ratio 500 to 93.8 RPM.
- 1-1200 HP GEAR DRIVE, 353 to 94.6 RPM, 3.73 to 1 ratio.
- 1-500 HP GEAR DRIVE, 10 to 1 ratio.
- 2-35 HP SPEED REDUCERS, Falk 21 to 1.

FURNACES

- 2-65-TON ELECTRIC MELTING FURNACES, top charge.
- 2-60-TON CAPACITY HOLDING FURNACES, electric, each with 75-KVA transformer.
- 2-CONVERTERS, 10-ton, bottom blow, with accessories.

CRANES

- 1-MORGAN INGOT STRIPPER CRANE, 50' span, 200 tons capacity 230 volts D.C.
- 1-150-TON CRANE, 75' span.
- 1-ALLIANCE LADLE CRANE, 4 girders, 40 ton main hoist, 25 ton auxiliary, 55'5" span, 42' lift.

SHEARS

- 1-UNITED 21 BAR SHEAR vertical open side.
- 1-156" x 9 1/2" PLATE SHEAR.
- 1-156" x 1 1/2" SHEET SQUARING SHEAR.

- 1-FLYING SHEAR for tinplate, with side trimmer and classifier.
- 1-SPLITTING SHEAR FOR SHEETS, Mesta 92".
- 1-HALLIDEN FLYING SHEAR LINE, capacity 36" wide x 20 to 34 gauge x 15" to 144" long.

MISCELLANEOUS

- 2-90-ton Treadwell HOT METAL TRANSFER CARS.
- 3-Blaw-Knox SLAG LADLE TRANSFER CARS.
- 1-CORRUGATING MACHINE, Stamco, for 12" wide sheets, including several sets of removable dies.
- 1-DRAWBENCH, Mesta, oil-hydraulic, for 3 strands of bars 20" long.
- 2-PICKLING MACHINES for sheets, Mesta.
- 1-60" GALVANIZING LINE for sheets, with 2 roller levellers.
- 1-1000-ton STEAM HYDRAULIC FORGING PRESS.
- 1-REEL, 11" face x 17 1/2" dia.
- 1-RECOILER for 88" wide strip.
- 1-ROLLER LEVELER, McKay, rolls 80" face & 5 1/2" dia. with gear box and universal spindles.
- 1-34" x 192" ROLL GRINDER.
- 1-41" ROLL LATHE, enclosed headstock, tailstock, plano rest, 20 HP, 500/1500 RPM, 230 volts, D.C. motor and controls.
- 1-Tandem SLITTING AND CUT-TO-LENGTH LINE, heavy duty max. opening for 38" wide.
- 2-UNITED HOT SAWS, 50" sliding frame.
- 2-KANE & ROACH BAR AND ANGLE STRAIGHTENERS, size 24, cap. 3" x 3" x 3/8" angles, 3 1/2" channels and 2" bars.
- 1-STRETCHER LEVELLER, for sheets, 500,000 lbs.
- 1-UNCOILER, cone type, 60" max. width rolls.
- 1-WIRE DRAWING MACHINE, Aetna-Standard, 16" block, 5-unit.

SPECIALS

COMPLETE ELECTROLYTIC TIN MILL CONSISTING OF

- 4-High Mesta Cold Reducing Mill, 5 stands.
- 4-High Temple Mills (2).
- Continuous pickling, continuous vertical normalizing furnaces, cleaning lines, electrolytic tinning lines, shears, etc.
- Produces 150,000 tons per annum.
- Can be seen in operation now.

34" REVERSING HOT STRIP MILL CONSISTING OF

- 1-Slab re-heating furnace 44" wide x 93'4" long, 4 heating zones, oil and gas burners.
- 1-Mill drive motor, reversing, 2500 HP, 75/150 RPM, 600 volt D.C., with controls.
- 1-28" x 40" 2-high reversing mill having Morgoil bearings in roll stand, Timken bearings in pinion stand, universal spindles with carriers, 75 HP motor screwdown.
- 2-Re-heating coiling furnaces, each 50" wide, for gas or oil fuel, for coiling and uncoiling strip under tension while being rolled to thinner gauges.
- 1-Delivery table, 38" wide x 136'6" long, with anti-friction bearings. Speed 900 FPM.
- 1-Coiler 24" dia., driven by 100 HP, 485/1200 RPM motor. Timken bearings. Air push-off.
- 1-Coil discharge gravity conveyor 70'4" long.
- 1-Main motor-generator set for supplying reversing motor; also auxiliary generators.

All of the above equipment is in good operating condition, has been used very little. Further details will be furnished upon request.

All types of rolling mills and steel works equipment, both large and small, are furnished by us. This can mean a single machine or complete equipment for a plant. Our shipments are made under the careful supervision of our engineers. The long period of our operations has been marked by the sustained succession of heavy mill shipments to customers in the United States and abroad. Our business was founded in 1915.

MANY OTHER ITEMS AVAILABLE—SEND FOR OUR LIST

2220 OLIVER BUILDING **FRANK B. FOSTER, INC.** PITTSBURGH 22, PA.
CABLE ADDRESS: "FOSTER PITTSBURGH"

RE-NU-BILT ELECTRICAL POWER EQUIPMENT

DC MOTORS

Qu.	H.P.	Make	Type	Volts	RPM
1	3200	Elliott		475	320
1	2250	Elliott		600	200/300
1	2200	G.E.	MCF	600	400/500
1	1750	Whse.		250	175/350
1	1500	Whse.		525	600
1	1375	G.E.	MCF	415	1300
1	1200	G.E.	MCF	600	450/600
1	940	Whse.	QM	250	140/170
3	800	G.E.	MCF	250	400/750
3	450	Whse.		550	415
3	300	G.E.	APC	230	400
2	200	Whse.	CB-207.4	250	850/1200
2	125	Whse.	SK-190	230	450/1200
1	150	G.E.	CDHB	600	250/700
1	150	Cr. Wh.	65-H	230	1150
1	125	Whse.	SK-185	230	350/1050
2	100	Whse.	SK-181	230	450/1000
1	60/100	G.E.	RP-17	230	450/900
1	75	G.E.	CD-1231	230	850
2	75	Cr. Wh.	53HTEFC	230	860
1	50	G.E.	MD-412-AE	230	550
6	40	Rel.BB	385PTEFC	230	500/1500
1	30/40	Whse.D.P.	SK-131.5-BB	230	500/1500
3 (unused)	30 G.E.	CDM-85-BB		230	2200

MG SETS—3 Ph. 60 Cy.

Qu.	K.W.	Make	Type	RPM	Volts	AC
1	350	G.E.		900	125	4160/2300/440
1	2000	G.E.		514	600	2300/4600
2	1750/2100	G.E.		514	250/300	2500/4600
2	1000	G.E.		720	600	6600/13200
1	750	G.E.		720	125/250	2300/4600
1	500	Whse.		900	125/250	440
1	500	G.E.		900	125/250	440/2300
2	300	G.E.		1200	275	2300
1	250	Whse.		1200	250	2300/4600
1	200	El. Ma.		1200	550	2300
1	200	Whse.		1200	250	440
1	200	G.E.		1200	250	440

TRANSFORMERS

Qu.	KVA	Make	Type	Ph.	Volts
3	3333	Whse.	OISC	1	13800 x 2300
1	1500	G.E. auto	HT	3	4000/4200/4400
3	1000	G.E.	HVDDJ	1	2400 x 480
3	1000	G.E.	OA.FA	1	13800 x 230/460
2	750	G.E.	Petrol	1	4800 x 83/55
2	500	Kuhl	OISC	1	13200 x 6000

CRANE & MILL MOTORS

230 V., D.C.

Qu.	H.P.	Make	Type	RPM
1	3	Whse.	HK-2	335
1	3	Cr. Wh.	SCM-FF	1750
1	3 1/2	Whse.	MC-20	600
3	6 7/8	Whse.	MCA-20	700/600
1	7 1/2	G.E.	MD-406AE	1150
1	10	G.E.	MD-104	400/800
2	10	G.E.	COM-1825	750
1	10	G.E.	Series B.B.	925
1	10	G.B.	CO-1805	750
1	20	Whse.	Series S.B.	975
3	10	Cr. Wh.	SCM-AH	1150
3	15	Cr. Wh.	SCM-BA	1150
14	12/15	Whse.	MCA-30	700/600
2	23	G.E.	MDS-408	825
2	25	G.E.	AE-2 sh.	650
1	25	Whse.	MD-408-AE	725
1	35	Whse.	CO-1608 Ser.	480
1	35	Whse.	CK-9-Comp. S.B.	480
1	50	Whse.	CK-9-Shunt R.B.	600
3	50	G.E.	CK-9-Comp. S.B.	550
3	50	G.E.	COM-1830 Comp.	550
3	50	Whse.	CK-9-Shunt R.B.	550
1	50	G.E.	CK-9-Comp. R.B.	550
5	100/140	Whse.	MD-412AE	450
1	100	G.E.	Comp. RB	475
9	125	G.E.	MC-50 Series	625
			CO-1832	
			Series S.B.	

We are in position to furnish Package Drives up to 2000 HP with suitable M-G set and exciter complete with AC & DC controls.

A. C. MOTORS

3 phase—60 cycle

SLIP RING

Qu.	H.P.	Make	Type	Volts	Speed
2	1750	G.E.	M-570BB	4800	1800
1	1500	G.E.	MT	9600	1187
1	1100	F.M.	OVZK, B.B.	4800	1800
1	800	G.E.	MT	2300	293
1	750	G.E.	MT-573	2200	1190
1	700	A.C.		2300	500
1	500	Whse.	CW	520	350
1	400	Whse.	CW	140	514
1	350	Cr. Wh.	Size 71	208.416	1785
1	350	G.E.	1M-17A	440/2200	720
1	250	G.E.	MT-624Y	4000	257
1	250	Cr. Wh.	Size 290	2300	350
1	250	Al.Ch.		550	600
1	200	G.E.	IEIS B-M	220/440	1760
1	200	G.E.	MT-557Y	220/440	1760
1	200	Cr. Wh.	290B	440	505
1	200	G.E.	IM	440	435
1	200	G.E.	1-17AM	2200	435
1	200	G.E.	IM	2200	580
1	150 (unused)	Whse.	CW	2306	435
1	125	A.C.		440	985
1	125	Al.Ch.		440	720

SQUIRREL CAGE

Qu.	H.P.	Make	Type	Volts	RPM
1	800	G.E.	KT-573	2200	1180
1	650	G.E.	KT-550BY	440	3070
3	500	Whse.	CS-1214	2000	500
2	450	Whse.	CS-1420	2300/4150	354
1	400	G.E.	IK	2200	500
1	200	G.E.	KT-550A	2300	1775
1	200	G.E.	IK-17	440	580
2	200	G.E.	KT-557	440	1800

SYNCHRONOUS

Qu.	H.P.	Make	Type	Volts	RPM
1	7000	G.E.	ATI	2200/6600	600
1	4350	C.W.	3501SL4000/6900/13800	514	
1	2850	Whse.	Sp.f	2300/1600	514
1	2800	Whse.	Sp.f	2300	720
1	2000	Whse.		2300	102
2	1750	G.E.	ATI	2200/12000	600
1	735	Whse.		2200	128.5

BELYEA COMPANY, Inc.

47 Howell St.

Tel. Oldfield 3-3334

Jersey City 6, N. J.

B.S.A. CHUCKS Medium Duty, Precision Made in England



MODEL 580
Self-centering
Geared Scroll
UNIVERSAL
Three Jaws

Includes 1 set Ex-
ternal Jaws, 1 Key,
1 set Internal Jaws,
3 Pinions, 3 Bolts



MODEL 550
4-JAW INDEPEND-
ENT CHUCK

Includes 4 operat-
ing screws, 4 Re-
versible Jaws, 4
Bolts, 1 Key.

Dept. M, 251 Centre St.
New York 13, N. Y.
CANal 6-5275

Order
Today

VICTOR MACHINERY EXCHANGE, INC.
Dealers in Tool Room Equipment

IMMEDIATE DELIVERY

SIZE	WGHT (lbs)	CHUCK BORE	PRICE
3"	3 1/2	1/2"	\$ 35.75
4"	8	1"	35.75
5"	12	1 1/2"	41.50
6"	17 1/2	1 3/4"	48.00
7 1/2"	29	2"	56.50
8"	42	2 1/2"	71.50
10 1/2"	62	3"	88.50
12"	88	3 1/2"	120.00
15"	143	4"	180.00
18"	205	4 1/2"	251.90
21"	265	5"	320.00
24"	324	5 1/2"	390.00

SIZE	WGHT (lbs)	CHUCK BORE	PRICE
4 1/2"	8	1"	\$ 30.50
6"	16	1 1/2"	35.00
8"	34	1 3/4"	51.00
10"	60	2"	62.50
12"	80	2 1/2"	74.50
14"	98	3"	84.00
16"	126	3 1/2"	105.00
18"	166	4"	140.00
20"	204	4 1/2"	165.00
22"	246	5"	205.00
24"	292	5 1/2"	220.00
30"	490	6 1/2"	340.00

MACHINES FOR YOUR YARD

Hydrocrane Model H-3 truck crane
Northwest 226 w/ Murphy Diesel
3 Telsmith d. d. screens
Pioneer 30 x 42' conveyor
American 30 H. P. car puller
Several 7 1/2 KW magnet generators
TRACTOR & EQUIPMENT CO.
10006 Southwest Highway, Oak Lawn, Ill.

FOR SALE

Cleveland Model G Punch & Shear 154 Tons
Capacity. Complete with 100 punches. Angle
Shear Attachment cuts 6" x 1/2". Bar at-
tachment 10" x 1", Punch 2" Diam. through
1" plate.

SINGLETON MACHINE & TOOL CO.
49 Meadow Road Rutherford, New Jersey
Ph. Webster 3-2555

FOR SALE COMPLETE BAR & ROD ROLLING MILL IMMEDIATELY AVAILABLE

Suitable for Rolling Steel or Copper
billets down to bar or rod sizes,
including hotbed, shears, and rod coiler.

STILL SET-UP, REASONABLY
PRICED FOR IMMEDIATE SALE

NATIONAL MACHINERY EXCHANGE

126 Mott St. New York 13, N. Y.
CANal 6-3470

PRESSES

#506 BLISS, S.S.S.C., Tie Rod, Eccentric
Shaft, 6" stroke, air cushion, M.D.

#650 BLISS, S.S.S.C., Hi-Speed, Tie Rod,
Flywheel, 2" stroke, roll feed, scrap cutter,
automatic oiling, M.D.

#30C-24 CLEVELAND, Double Crank,
Gap Frame, Flywheel, 5" stroke, auto-
matic oiling, M.D.

POWER PRESS SPECIALISTS

471 North 5th St. Phila. 23, Pa.

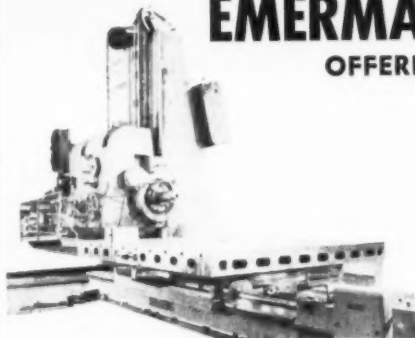
EMERMAN HAS THE BORING MILLS

OFFERED FROM STOCK—FOR SALE OR RENT

8" SELLERS FLOOR TYPE BORING, DRILLING & MILLING MACHINE

SERIAL 1211

Diameter of Spindle 8", Stroke 96", Length
of Bed 24'8", Travel of Column on Bed 16',
Height of Column 14'8", Travel of Head on
Column 10'



BORING MILLS, VERTICAL

	SER. NO.	DATE
24" Bullard Spiral Drive Vertical Turret Lathe, comp. elects.	15742	1938
38"-44" Niles Vertical Turret Lathe, comp. elects.	21026	1939
42" Bullard, Spiral Drive, Taper Attachment, comp. elects.	21485	1939
42"-50" Niles Vert. Boring Mill, turret on rail, side head, comp. elects.	23947	1953
42" Bullard Cut Master, 3-jaw chuck, comp. elects.	24591	1947
42" Bullard Vertical Turret Lathe, Spiral Drive, tooling, comp. elects.	19045	1942
54" Bullard Vertical Turret Lathe, Spiral Drive, Taper Attach. EXTRA HEIGHT, comp. elects.	14903	
78" Betts, Heavy Duty Vertical Boring & Turning Mill, comp. elects.	E-5426-3	1943

BORING MILLS, HORIZONTAL, TABLE & FLOOR TYPE

3" Defiance Horiz. Table Type Bar, comp. elects.	1157-41 (2)	1941
3 1/2" Cincinnati-Gilbert Table Type Boring Mill, comp. elects.	235	1943
3 1/2" Keystone Universal Horiz. Drilling Machine, comp. elects.	4247	1942
3 1/2" Cincinnati-Gilbert Floor Type Boring Bar, comp. elects.	132	1944
3 1/2" Universal Horiz. Table Type Boring Mill, comp. elects.	552	
50T Giddings & Lewis Horiz. Boring Mill, comp. elects.	8519	1938
5" Pawling & Harnischfeger Horiz. Boring Mill, comp. elects.	320	
5 1/2" Ingersoll Boring, Drilling & Milling Machine, comp. elects.	16934	1940
6" Simmons Horizontal Cylinder Boring Mill (6), comp. elects.	60010	1942
8" Mod. 8HF Sellers, Boring, Drilling & Milling Machine, Floor type, comp. elects.	1211	

EMERMAN MACHINERY CORP.

865 West 120th Street, Chicago 43, Illinois—PULLMAN 5-7626

AVAILABLE IN STOCK

PUMPS

Aldrich; (3) Inverted Triplex Type; 1945; Timken; 2 1/2" x 8" Cap.
124 G.P.M. @ 2500 P.S.I. 200 R.P.M. Stainless Plungers, Valves
and Seats; Synchronized Suction Valve Control; G. E. Syn.
Motors; 200 H.P. 3/60/2300; 200 R.P.M.
Byron-Jackson Centrifugal; 15"; Cap. 120 G.P.M. @ 4160' Head;
G. E. Ver. Motor; 200 H.P. 3/60/440; 3550 R.P.M.
Byron-Jackson Centrifugal; (2) 12"; Cap. 50 G.P.M. @ 2710' Head;
G. E. Ver. Motor; 75 H.P. 3/60/440; 3550 R.P.M.

ROLLS

Southwark Pyramid Type; Drop End; Cap. 27' x 1" Plate; Top Roll
28" Diam. and Bottom Rolls 20" Diam. Driving Motor 100 H.P.
Adjusting Motor to Top Roll 40 H.P.
Wickes Pyramid Type; Drop End; Cap. 20' x 3/4" Plate.

SHEARS

Lewis (Blaw-Knox) No. 3 1/4; Alligator Shear; ALL STEEL; Left
Hand; Low Knife; Cap. 3 1/4" Sq. and 4" Round; Blades 24" x
8" x 2".
Bertsch Splitting Shear; ALL STEEL; Blades 15" Long; Cap. to
Split 3/4" Plate; Shear 1 1/4" Round and 6" x 3/4" Flats; M.D.

DERRICK CAR

Cap. 50 Tons @ 40' Rad. ALL STEEL; With 50' and 90' Booms;
Length 50'; Wt. 100 Tons; Steam (oil fired); Self Propelled.

HOIST

Mundy Double Drum; Cap. 18,000 Lbs. Line Pull @ 200 F.P.M. at
Each Drum at Same Time; Geared 20.5 to 1; Rope Winch Each
Drum; Drums 21" Diam. and 48" Wide; G. E. 300 H. P. 3/60/2200;
585 R.P.M.

MOTORS

General Electric (2) Type BTA; Form BL; 3/60/440; Adjustable
Speed; 75 H.P. @ 375 R.P.M. Con. 50 Deg. and 150 H.P. @ 750
R.P.M. Con. 40 Deg. (infinite range).

AIR FLASKS

3500 P.S.I. Working Pressure; 20" x 36"; 22" x 48"; 48" x 11"; 26"
x 10" Misc. Smaller Sizes.

HYDRAULIC PRESSES

100 ton; Watson-Stillman; Hor. Str. Press; 16' Long.
250 ton; A-E; 4 Col. 16" Str. Down Acting; Bed 16' Long.
275 ton; United; Hor. Drawing Press; 15'6" Str.
300 ton; W-F; 4 Col. Self Contained; Coining-Embossing-Die Sinking.
350 ton; Southwark; Joggling Press; Hor. and Ver. Rams.
600 ton; Wood; Curing Press; Steam Platens 23" x 20'8".
600 ton; Wood; Forcing Press; Self Contained; 8' Bet. Bars.
2500 ton; Wood; 4 Col. Platens 92" x 204".

TUMBLING BARRELS

30" Tumblematic; (9) Banks of 3 Units Each; M.D. Late.

PUNCHES

Kling; Single End; 30" Thr. Arch. Jaw; 1/2" Thru 1 1/2"; M.D.
Cleveland; Size H; Hor. Arch. Jaw; 15" Thr. 2" Thru 1".

UNIV. WOOD MILLING MACHINE

Oliver No. 102; Univ. Milling, Drilling, Routing; Table 23' Long.

PILE DRIVER

Industrial Pile Driver; Steam; On Car; With Idler Car and Tender.

FLANGER

McCabe; Pneumatic; Cap. 1/2"; Pneumatic Holddown; 10 Sets Dies.

FLOOR PLATES

72" wide x 23' Long; T slots; Machined 3 Sides; 30,000 Lbs.
58 1/2" wide x 13' Long; T slots; Machined 3 Sides; 8000 Lbs.

C. G. WYATT MACHINERY CO., INC.

24th and Hayes Ave., Camden 5, New Jersey

EMerson 5-0277

THE CLEARING HOUSE

UNUSUAL OFFERINGS



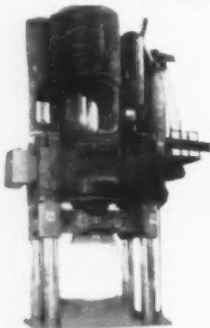
36 ft. Vertical Boring Mill Table & Drive 400,000#

(2) 5" bar Sellers horiz. floor type boring machs., P. R. Trav., mo. dr.

100" Betts Vert. boring mill, adj. rail; var. vol. dr. w/gen.

12 ft. dia. 5 ft. face Parsons-Muir spur, helical & herring bone hobber, mo. dr.

30" dia. 60" face Parsons-Muir spur, helical & herring bone hobber, mo. dr.



1500
TON
MESTA
STEAM
HYDRAULIC
FORGING
PRESS
...

Open Height to Bed 7'6"—Clear. Bet. Posts R. to L. and F. to B. 6'10" and 2'4"—Main Ram 24" D. Intensifier Ram 8 1/4" Diam.—Hyd. Pr. 1500#—Air or Steam 150#. Est. Wght. 180,000#—Excel. Cond.

35 ton forging rotator, Brown hoist, spg. susp., mo. dr.

MACHINE TOOLS SALES COMPANY, INC.

1617 Pennsylvania Boulevard

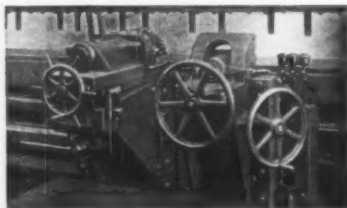
Philadelphia 3, Pa.

Rittenhouse 6-8871

314 ton Loomis hydraulic extrusion press w/pump, mo. dr.

48" x 29 ft. Niles boring & trepanning lathe, grd. hd., mo. dr.

36" x 56 ft. Bridgeford boring & trepanning lathe, grd., mo. dr.



40 ft. Sellers plate planer, Mod. C, hvy. duty, separate edging and scarf, hds., 34 air jacks, mo. dr.

36 ft. Southwark plate planer, reversing mo. dr.

32 ft. Sellers plate planer, Mod. B, rev. mo. dr.

48" x 48" x 18 ft. Niles planer 3 hds., box table, rev. mo. dr.

36" American Universal shaper, f. feed lub., mo. dr.



150" diam. x 60" & 120" face
Parsons Gear
Hobber, mo. dr.
WITH COMPANION:
30' diam.,
same capacity
Parsons Pinion
Hobber, mo. dr.

49th YEAR —:— 49th YEAR MOTORS & GENERATORS, etc. 1 YEAR GUARANTEE

Partial Listing Only!

600 Volt D.C. Rolling Mill Motors
2—750 HP GE MCF 450/900 RPM
1—750 HP GE MCF 300/720 RPM
1—750 HP GE MCF 120/360 RPM

230 Volt D.C. Motors
2—320 HP GE MPC 1100 RPM
1—150 HP CW 500 RPM
1—165 HP A.C. 1175 RPM
1—150 HP GE 1700 RPM
1—150 HP West. 1100 RPM
1—125 HP Reliance 600 RPM
1—100 HP GE 1750 RPM
1—100 HP GE 1150 RPM
1—100 HP West. 850 RPM
1—100 HP Reliance, 500 RPM
1—100 HP E-D 475/950 RPM

600 Volts D.C. Generators
1800 KW General Electric Type MPC 514 RPM

250 Volt D.C. Generators
1—1250 KW Elliott (1947) 720 RPM
1—750 KW CW 720 RPM
1—500 KW G-L 1200 RPM
1—300 KW G-L 1200 RPM
1—300 KW West. 1200 RPM
1—300 KW C.W. 1200 RPM

125 Volt D.C. Generators
1—150 KW Westinghouse 1200 RPM
1—100 KW Westinghouse 1200 RPM
1—75 KW Westinghouse 1250 RPM
1—60 KW Crocker-Wheeler 750 RPM

Slipping Motors
1—500 HP West. 490 RPM
1—500 HP GE 450 RPM
1—350 HP West. 435 RPM
1—300 HP West. 1200 RPM
1—250 HP GE 600 RPM
1—150 HP Louis Allis 1750 RPM
1—150 HP West. 1160 RPM
1—150 HP GE 875 RPM
1—150 HP GE 600 RPM
2—100 HP GE 1750 RPM
1—100 HP West. 1160 RPM
1—100 HP West. 495 RPM
1—75 HP GE 720 RPM
1—75 HP West. 600 RPM
1—75 HP GE 495 RPM

Synchronous Motors
1—2800 HP West. 720 RPM
2—700 HP West. 450 RPM
1—600 HP A.C. 1200 RPM
1—600 HP A.C. 600 RPM
1—500 HP G.E. 600 RPM
1—475 HP West. 720 RPM
2—400 HP G.E. 1200 RPM
1—350 HP A.C. 600 RPM
3—300 HP Elec. Mach. 1800 RPM
1—300 HP West. 1200 RPM
1—220 HP West. 1200 RPM
1—200 HP A.C. 1200 RPM

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368 CFM 125 psi 10-6 x 7 Joy WN112B
420 CFM 40 psi 12 x 9 Ing. ES-Oil-Less
463 CFM 100 psi 12 x 11 Penn 3AT Gardner X
528 CFM 100 psi 14 x 12 IR-CP-Penn
585 CFM 100 psi 15-9 1/4 x 12 IR-XRE 3-60-4160
590 CFM 125 psi 13 1/2 x 8 Penn DE2
669 CFM 50 psi 15 x 11 Worth, HB or HS
676 CFM 100 psi 15-9 1/4 x 12 Ing. XRB
686 CFM 100 psi 14 x 13 Worth HB
877 CFM 100 psi 17-10 1/2 x 14 Ing. XRB
1007 CFM 110 psi 18-11 x 12 Chie OCB
2018 CFM Vacuum 25 x 11 Penn 7 AT
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Qu.	KW	Make	R.P.M.	D.C. Volts	A.C. Volts
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2*	1450	Whse.	900	600/710	4160/2400
1	1250	G.E.	450	132/265	4160
1	1250	Whse.	720	600	4160/2400
1	750	G.E.	900	250	4000/2300
1	600	G.E.	900	250	4000/2300
1	500	Al. Ch.	600	250	2300
1	300	Whse.	1200	250	4000/2300
2	200	Whse.	1200	250	2300/440
1	200	G.E.	720	250	2300/440
2	175	G.E.	1200	250/275	440/220
1	150	Whse.	1200	250	2300/440
1	150	Cr. Wh.	720	250	440/220
1	150	G.E.	1200	250	4000/2300

*—3 Unit Sets.

LARGE DIRECT CURRENT MOTORS

1	3000	G.E.	600	250/360
2	1500	Whse.	325	600
1	600	Whse.	230	110/220
1	300	Whse.	230	300

IDEAL REEL DRIVES

(2)—600-HP Allis-Chalmers mill motors, 600-VDC, 300/600 R.P.M., with a 1200-KW, 600-VDC Westinghouse M-G Set, 1750-HP synchronous motor, 4160/2300-Volt, 3 phase, 60 cycle.
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3-Phase—60 Cycle

Qu.	HP	Make	P.F.	Volts	R.P.M.
1	1750	G.E.	100	2200	3600
1	1500	G.E.	80	4150/2400	900
1	1500	Whse.	80	2300	514
2 (new)	1450	Whse.	80	4160	450
1	920	G.E.	80	2200/440	300
1	700	El. Mch.	100	440	200
1	450	Whse.	100	2200	128
2	350	G.E.	100	2300	900
1	300	Whse.	80	2300	900
1	300	G.E.	100	2300/440	720
1	200	G.E.	80	2200/440	600
1	200	Al. Ch.	100	2300	514
1	200	Al. Ch.	100	2300/440	360

SLIP RING MOTORS

Constant Duty—3 Phase, 60 Cycle

Qu.	HP	Make	Type	Volts	R.P.M.
1	1800	Whse.	CW	2300	252
3	1500	G.E.	MT	6900/4160	414
1	600	G.E.	1-M	2200	272
2	500	Al. Ch.	ARY	2300	505
1	500	G.E.	1-M	2300	450
1	400	Al. Ch.	ARY	2300	505
1	400	Whse.	CW	2200	290
1	350	G.E.	1E15B	2200	1180
1	350	G.E.	MT-112	2200	450
1	300	Whse.	CW-1012	2200	720
1	300	G.E.	1-M	440	1200
1	250	Al. Ch.	ARY	440	705
1	250	Whse.	CW	4160/2300	720
1	250	G.E.	1-M	550	450
1	250	G.E.	MT-414	2200	300

G.E. 6-section cubicle, 156" long x 68" high x 66" deep. (5) sections have type FKR-225 breakers, 15-KV, 600 amps., 150,000-KV I.C., 125-VDC closing, 220-VAC tripping with CT's, meters, CO relays, (1) section with PT, fuses, drawout disconnect switch.

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3	4000	Eptegraft	1	24,000-1800/2400
3	2000	Al. Ch.	1	24,000/12,200-2100/4160
3	1000	G.E.	1	22,000-2300/4000
3	500	Wagner	1	6900/11,930-460
3	333	G.E.	1	13,200-2300/4000
3	333	Kuhlman	1	13,200-240/480
3	333	Kuhlman	1	4800/8320-210/480
1	300	Whse.	3	11,500-440
3	275	Kuhlman	1	4160/7200-210/480
3	225	Whse.	3	2400/4160-250/144

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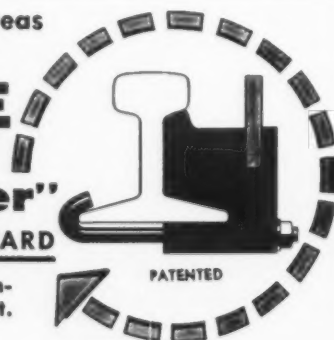
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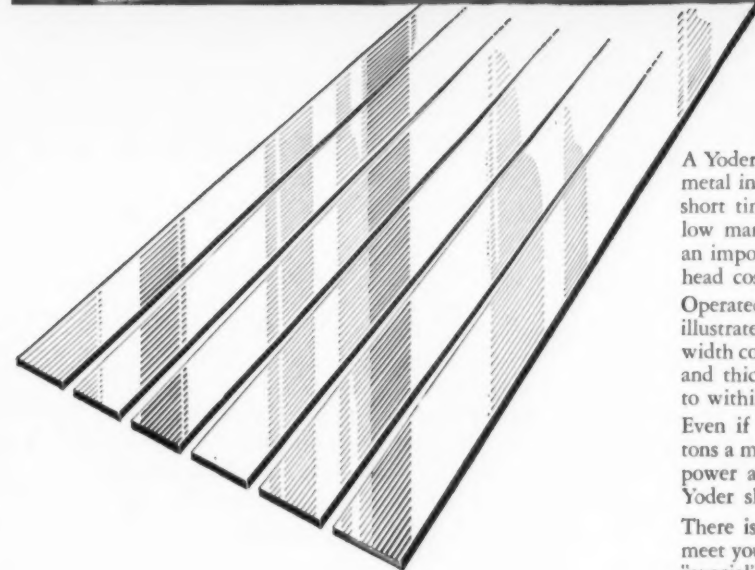
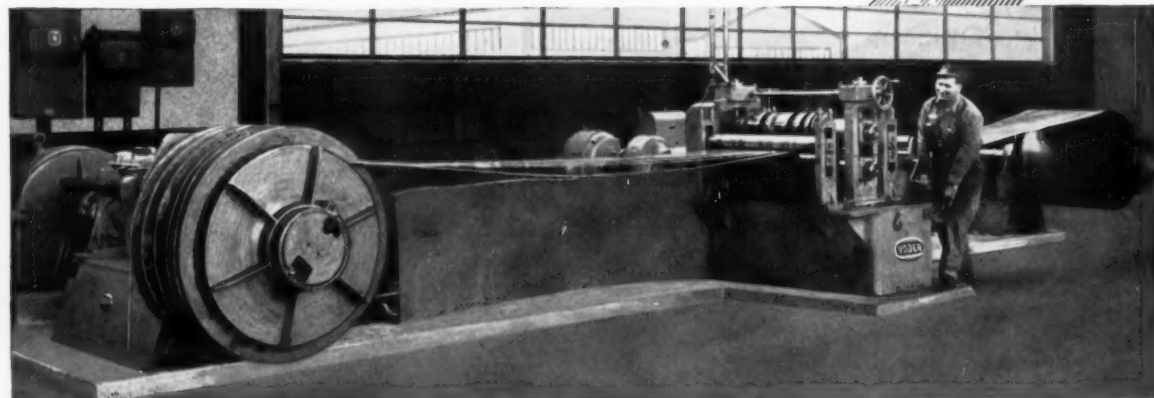
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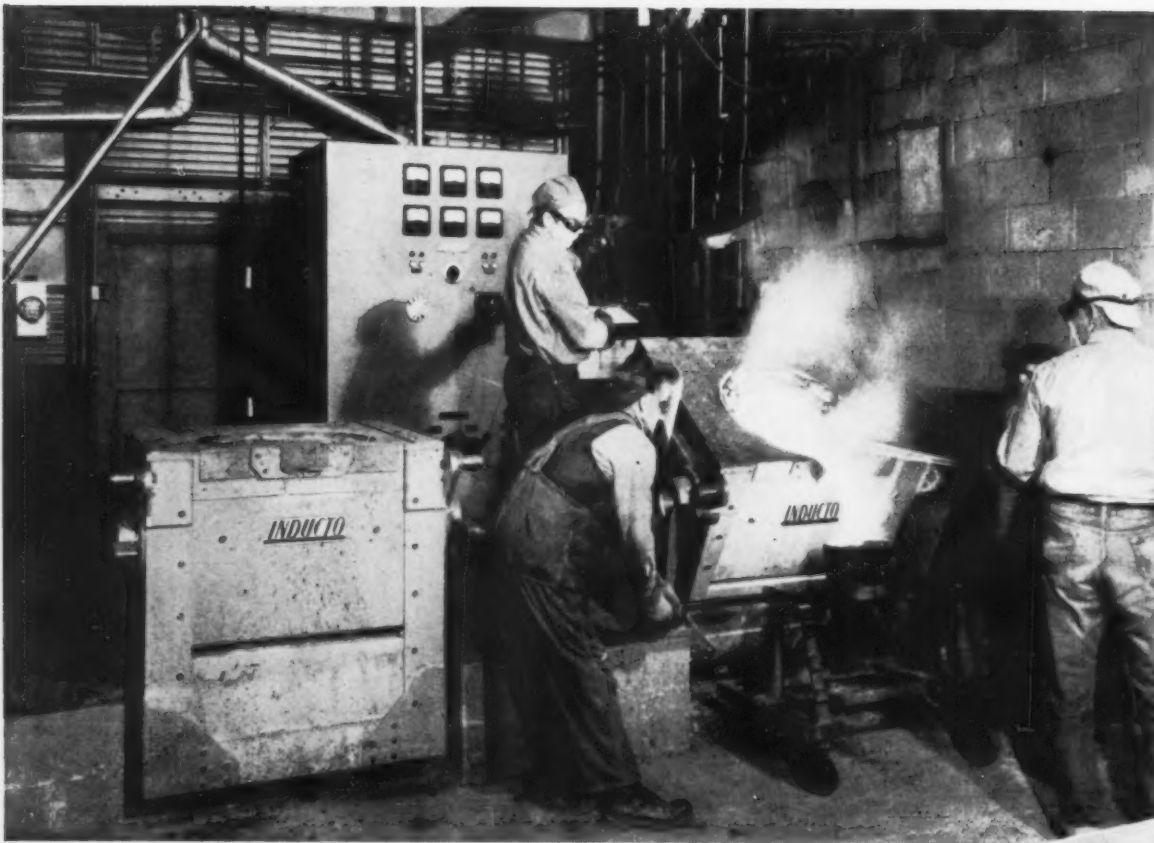
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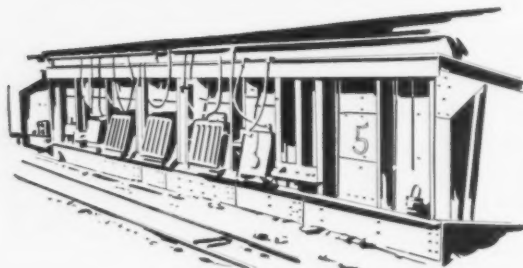
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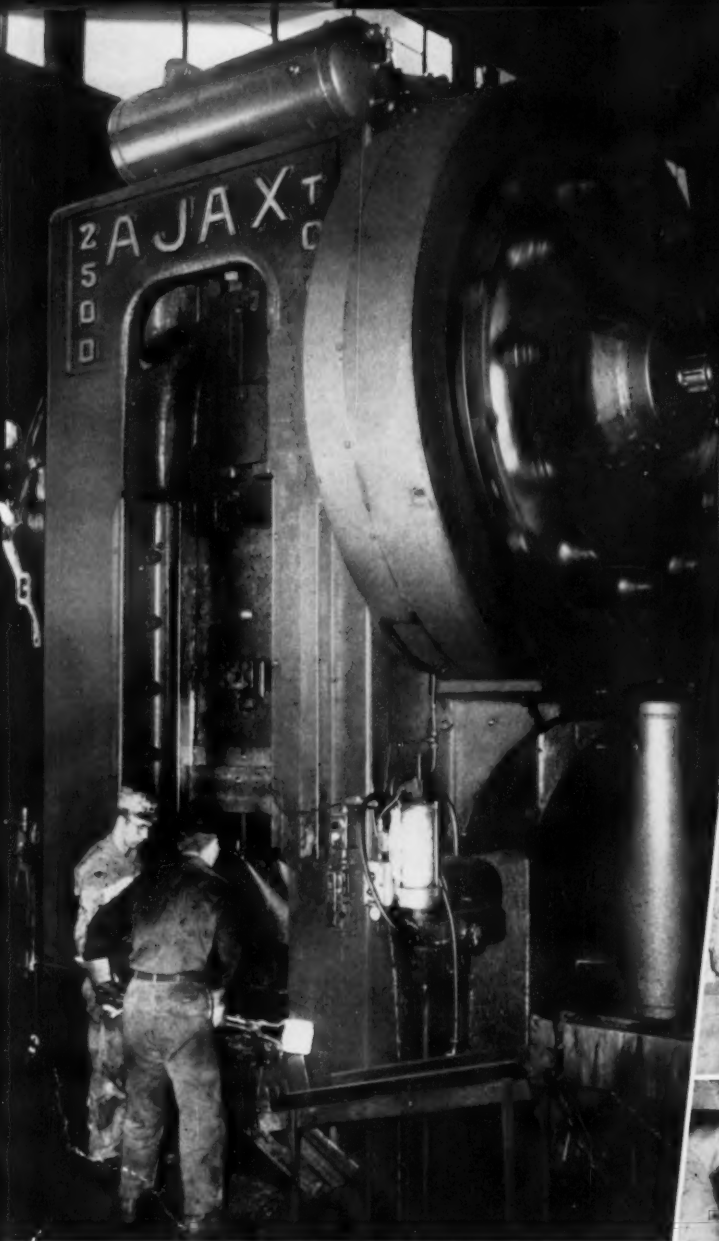
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Machining spur gears made from Bethlehem forged-and-rolled blanks.

When the Blank is Sound, Machining Costs Go Down

You probably know a machinist whose specialty is gears. Some day ask him what a sound blank means in terms of machining speed. Ask him how a sound blank reduces costs.

Directly or indirectly, his answers will tell you why Bethlehem gear blanks are so widely specified. Wherever these sturdy Bethlehem products are used, their advantages are instantly apparent. Made in a two-way mill that both forges and rolls the steel, they are highly uniform and very strong throughout. Internal structure is excellent. There are no hidden pitfalls beneath the surface to snag the cutting tool, delay the work, or cause rejects. These circular blanks can be turned, bored, faced, and

hobbed with complete assurance of a good finished job in every respect.

You can obtain Bethlehem forged-and-rolled blanks in sizes from 10 to 46 in. OD, heat-treated or untreated. They are available in a wide range of sections. Use them not only for gears, but for crane and sheave wheels, flywheels, turbine rotors, brake and clutch drums, pipe flanges, etc. Many details are covered in Booklet 216, a copy of which will be mailed at your request.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL



TRABON

CENTRALIZED LUBRICATING SYSTEMS

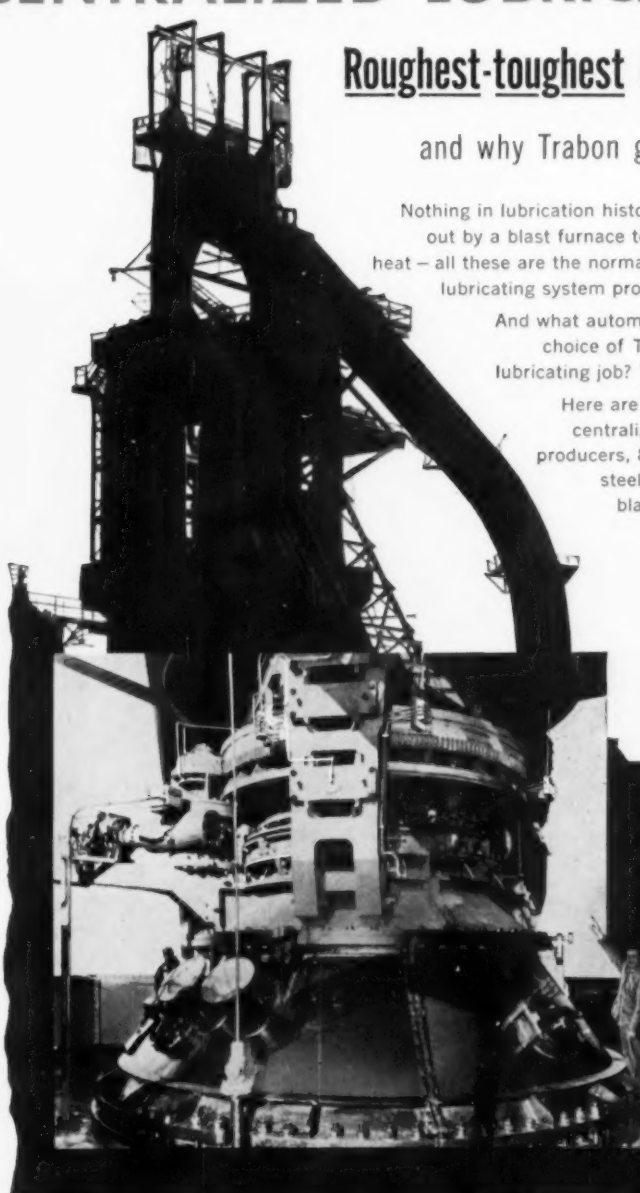
Roughest-toughest lubricating job in the world...

and why Trabon gets 60% of all this business

Nothing in lubrication history can match the murderous punishment dished out by a blast furnace top. Smoke, gas, ashes, rain, snow, ice and infernal heat — all these are the normal, daily obstacles that face an automatic lubricating system protecting the blast furnace tops of the nation!

And what automatic centralized lubricating system is the first choice of The "Big 6" steel producers for this crucial lubricating job? Trabon, by an overwhelming majority of installations!

Here are the facts! Of the 146 blast furnaces with centralized lubrication operated by the "Big 6" steel producers, 88 (60%) are protected by Trabon. Other steel producers boost the total of Trabon-equipped blast furnaces to over 100 not including many more Canadian installations.



Among Trabon-equipped blast furnaces is "Hazel" of the Fairless Works, U. S. Steel Corporation. "Hazel" recently set a monthly production record of 62,370 tons. Close-up shows Trabon feeders and lubricant lines which deliver the proper amount of lubricant to a typical blast furnace top.

Trabon automatically delivers a measured amount of lubricant to revolving distributors, skip sheaves, bell beams and sheaves and to other points where proper lubrication assures trouble-free operation. No bearings are ever missed. Trabon saves labor, lubricant, increases production time and eliminates the hazards of having a man with a grease gun climbing around dangerous areas.

Remember—a system that can keep a blast furnace properly lubricated can do the same for any equipment, under any conditions. Write for technical details today!



Trabon

Trabon Engineering Corporation

28815 Aurora Road • Solon, Ohio

Centralized OIL AND GREASE SYSTEMS *Hot/Cold* CIRCULATING OIL SYSTEMS

WHAT'S NEW IN MOTOR CONTROL? * * * GET IT FIRST IN CUTLER-HAMMER

Star studded with economy features Cutler-Hammer Three-Star Unitrol



Standardized Modular Construction
All control units are 20" wide and in multiples of 14" in height. This permits easy interchange of various sizes and types of control units without rearrangement of the entire control assembly and avoids wasting space with dead panels to adapt non-uniform control units. This standardized modular construction also insures good appearance at all times because horizontal lines match.

No industrial today can afford to ignore the savings Unitrol now offers in the installation and use of motor control

Cutler-Hammer Unitrol cuts costs from the moment it is delivered. It can save days, often weeks, in the time required for the installation of motor control. The high cost of mounting and wiring individual starters is eliminated. Earlier use of the production facilities brings a speedier return on the investment. Unitrol often effects vital savings in floor space, sometimes avoids the need for costly plant construction.

In performance, nothing can compare with the Unitrol. Feature after feature of the astounding Three-Star Control saves time and expense. Superlife vertical contacts *never* require maintenance care in all normal use. Adjustable overload relay coils let motors work harder safely, save the expense of both damaged motors and needless production interruptions. Full three-phase protection such as able engineers now demand is offered by three-coil overload relays.

Compare Unitrol with any other control centers and see the difference. See how sizes and types of control units can be interchanged in Unitrol without rearrangement of the entire assembly or the waste of space with dead panels. Saves time, saves space, saves money. Compare and you *too* will insist on Cutler-Hammer Three-Star Unitrol. Write or wire *now* for full information. CUTLER-HAMMER Inc., 1325 St. Paul Avenue, Milwaukee 1, Wisconsin.



Unitrol plug-in feature disconnects control from power when unit is moved to test position, reconnects without misalignment when unit returns to operating position. Control panel is *always* vertical. Plug-in design permits back-to-back assemblies without staggering control units. Units are removed by merely disconnecting load and control wiring at terminal boards. This wiring is cabled, marked and color coded.



Unitrol provides either circuit breakers or fused disconnect switches of advanced design. Both have three-position self-aligning operators arranged for padlocking with as many as three locks in the "off" position. Recessed pushbuttons and concealed door hinges are typical features that add to safety and fine appearance.



Components front of panel mounted without stacking. No crowding, no power connections near panel fasteners. Many Three-Star Control exclusives. Superlife vertical contacts *never* require maintenance expense in all normal control uses. Adjustable overload relay coils let motors work harder with safety. Full Three-Phase Protection with 3-Coil overload relays on standard size starter panels.

*The name UNITROL is a
Cutler-Hammer trade mark*